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ABSTRACT

This packet contains both teacher and student editions for a curriculum for electronic prepress and publishing. The complete teacher edition consists of introductory pages, teacher pages, and the student edition. The introductory pages include a training and competency profile; a PrintED crosswalk that identifies the competencies covered in the publication and lists specifically where these skills are located by unit number and objective; an instructional and task analysis; basic skills icons and classifications; a basic skills matrix; and a tools, equipment, and materials list. The teacher pages include suggested activities, answers to assignment sheets and written test, a written test, learning activities sheets, transparency masters, an objective sheet, information sheet, student supplements, assignment sheets, and job sheets. The student edition contains seven units, each covering an objective with evaluation criteria, basic skills, an introduction, instructions, tools, equipment and materials needed, and procedure. The seven units of the curriculum cover the following topics: (1) introduction to prepress; (2) electronic prepress systems; (3) software; (4) type selection; (5) document design; (6) scanning; and (7) layout and document preparation. (KC)

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ED 443 959

Graphic Arts: Electronic Prepress and Publishing. First Edition. Teacher Edition [and] Student Edition.

by Anita Parks

Multistate Academic and Vocational Curriculum Consortium

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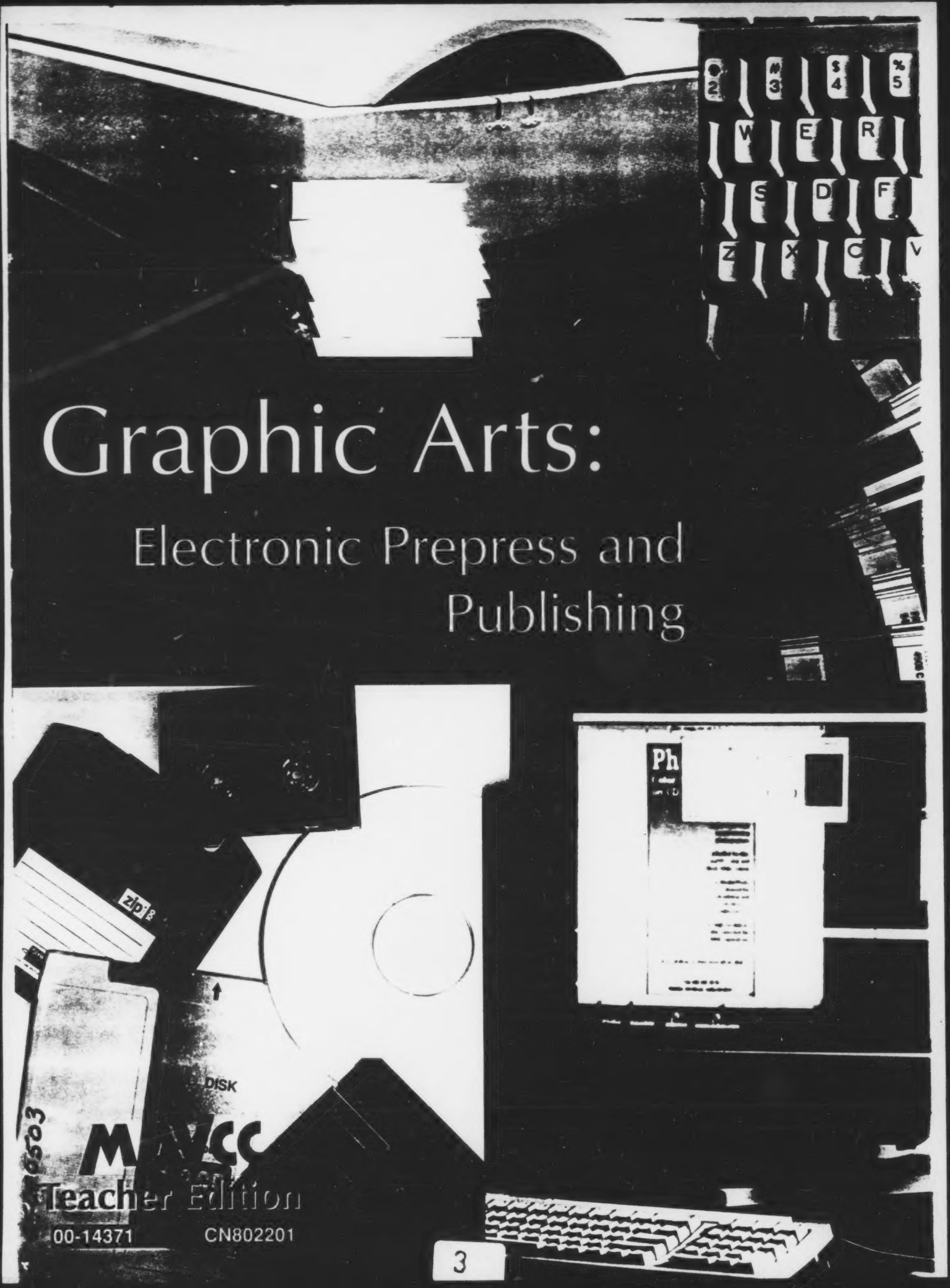
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Graphic Arts:

Electronic Prepress and Publishing

MAVCC

Teacher Edition

00-14371 CN802201

6503

Graphic Arts
Electronic Prepress and Publishing

First Edition

Teacher Edition

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Project coordinated by

Cheryl Barr

Developed by

The Multistate Academic and Vocational Curriculum Consortium, Inc.

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Units of Instruction

Unit 1: Introduction to Electronic Prepress
Unit 2: Electronic Prepress Systems
Unit 3: Software
Unit 4: Type Selection
Unit 5: Document Design
Unit 6: Scanning
Unit 7: Layout and Document Preparation

Foreword

Graphic Arts: Electronic Prepress and Publishing is the fourth in a series of instructional materials on graphic communication developed by the Multistate Academic and Vocational Curriculum Consortium (MAVCC). The wide acceptance and use of electronic prepress (EPP) in today's workplace has created the need for students to acquire the basic EPP skills now required in the printing industry.

Additional publications in the graphic arts series are as follows:

- *Graphic Arts: Orientation, Composition, and Paste-Up*—Revision
- *Graphic Arts: Process Camera, Stripping, and Platemaking*—Revision
- *Graphic Arts: The Press and Finishing Processes*—Revision

Please contact us concerning the availability of these products.

MAVCC's graphic arts series aligns with the PrintED Accreditation Program administered through the Graphic Arts Education Research Foundation (GAERF). A crosswalk is included aligning this publication with PrintED's digital image preparation and advanced digital image preparation tasks.

As you use these instructional materials, we hope that you will find that they contribute to the quality of your program. If any problems occur or if you have any suggestions for improvement of the materials, please call or write us.

Emmett Eary, Chair
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Multistate Academic and
Vocational Curriculum
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Executive Director
Multistate Academic and
Vocational Curriculum
Consortium

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Well-deserved thanks go to the many industry and education representatives who participated as members of MAVCC's graphic arts committees throughout the years. Their assistance in developing and reviewing these instructional materials has been an essential step in MAVCC's development process.

Appreciation is also extended to those individuals who contributed their time and talent to the first edition of *Graphic Arts: Electronic Prepress and Publishing*.

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A special thank you to the following companies for providing illustrations that appear in this publication:

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NOICC/CDTI
Oklahoma Department of Career and Technology Education, Stillwater, OK

Special appreciation is extended to Stacy Lee for her assistance in electronic publishing and in creating artwork, and to the employees of the Graphics Division of the Oklahoma Department of Career and Technology Education for printing this publication.

Thanks are also extended to Jeremy Salda of Heritage Press in El Reno, OK, and Rose Primeaux of the Oklahoma Department of Career and Technology Education for their assistance and support.

A final thank you to Cheryl Barr for coordinating this project.

Use of This Publication

Graphic Arts: Electronic Prepress and Publishing is available in both a teacher and student edition. The contents of these materials are tied to measurable and observable learning outcomes that were identified and validated by the graphic arts advisory committee, comprised of business/industry representatives and teachers. Competencies align with the PrintED task list developed by the Graphic Arts Education Research Foundation (GAERF).

Teacher Edition

The complete teacher edition consists of introductory pages, teacher pages, and the student edition. Materials are loose-leaf and three-hole punched and are divided into units of instruction that may be broken into more than one lesson or class period. For added flexibility, each unit is individually numbered beginning with a T for teacher page, followed by the unit number and page number.

Example:

Page 17 of Unit 3 in the teacher pages are represented as T 3–17.

MAVCC—*Graphic Arts: Electronic Prepress and Publishing* T 3–17

Page 1 of Unit 5 in the teacher pages are represented as T 5–1.

MAVCC—*Graphic Arts: Electronic Prepress and Publishing* T 5–1

Pages in the student edition are numbered beginning with the unit number, followed by the page number.

Example:

Page 7 of Unit 5 in the student edition is represented as Page 5–7.

MAVCC—*Graphic Arts: Electronic Prepress and Publishing* Page 5–7

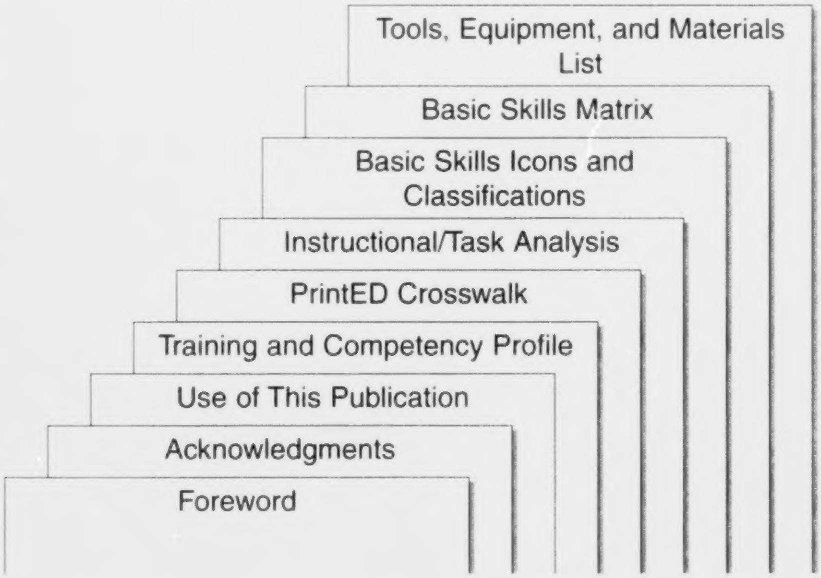
Use of This Publication

For group instruction, the teacher should determine the best way to teach each objective and allow for student participation. For self-paced or individualized instruction, students should be provided with opportunities to become involved in planning and being responsible for their own education. Careful study of each unit of instruction by the teacher will help to determine the following:

- amount of material that can be covered in each class period;
- supplies and materials required for assignment sheets and job sheets;
- resource people who must be contacted;
- supplementary materials to be ordered;
- skills that must be demonstrated and the amount of class time needed for demonstrations; and
- amount of class time needed for student practice and return demonstrations of mastered skills.

Teachers are encouraged to localize and personalize these materials to meet the needs of individual students, the community, and prospective employers.

Introductory Pages


Tools, Equipment, and Materials List
Basic Skills Matrix
Basic Skills Icons and Classifications
Instructional/Task Analysis
PrintED Crosswalk
Training and Competency Profile
Use of This Publication
Acknowledgments
Foreword

In addition to general information, such as the table of contents, acknowledgments, and the use of this publication, the following tools have been provided to assist administrators and teachers in planning for instruction.

☐ **Training and Competency Profile.** This form may be copied and used to record information about each student, such as enrollment dates, class attendance, and work experience, and to document the student's mastery of specific job competencies. It can also be used to provide information about the student's qualifications to potential employers and/or for entry into advanced training programs.

☐ **PrintED Crosswalk.** This document identifies the PrintED competencies covered in this publication and lists specifically where these skills are located by unit number and objective.

☐ **Instructional/Task Analysis.** This document provides a quick review of the contents of this publication by identifying the cognitive skills (what the student should know) and psychomotor skills (what the student should be able to do) addressed in each unit of instruction.

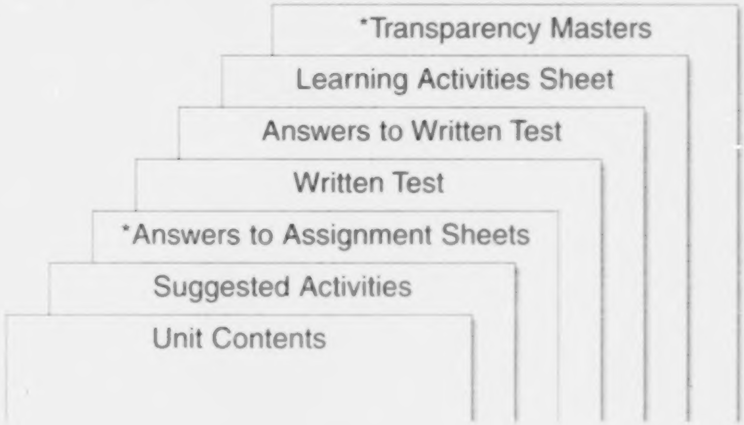
☐ **Basic Skills Icons and Classifications.** This page provides a reference guide of the graphic symbols that are used to identify the basic academic and workplace skills included in each assignment sheet and job sheet.

☐ **Basic Skills Matrix.** This document graphically summarizes the academic and workplace skills training included in the instructional materials. It should be helpful to teachers in planning for instruction, and to administrators as documentation that basic skills are being taught as part of the vocational training.

☐ **Tools, Equipment, and Materials List.** This document provides a comprehensive list of those items needed in a vocational program for students to complete training. It also can assist administrators and teachers in determining program costs.

Use of This Publication

Teacher Pages



*Designates components that may not appear in every unit of instruction

Teachers should study the teacher and student pages before introducing the unit, allowing enough time to obtain supplemental materials and to contact outside resource persons.

- ☐ **Suggested Activities.** This component assists teachers during the preparation stage of the teaching/learning process by providing an instructional plan, teaching suggestions, a list of references used in the development of each unit, and a list of suggested supplemental resources (books, posters, pamphlets, videotapes, computer software, and Internet sites) that may be used to enhance instruction.

  Instructions for evaluating student performance on the assignment sheets and job sheets are also included in the suggested activities section. Teachers should select and discuss with students the rating scale that will be used.

- ☐ **Answers to Assignment Sheets.** An answer key is provided, when applicable, to assist the teacher in evaluating student performance on a given assignment.

- ☐ **Written Test.** This component provides criterion-referenced evaluation of every cognitive objective listed in the unit of instruction, and serves as both a pretest and posttest to assist teachers in measuring each student's competency gains. (Assignment sheet and job sheet objectives are not evaluated on the written test.) If the teacher has added, deleted, or modified any objectives, appropriate changes should be made to both the test and answers to the written test.

Tests may be divided into shorter tests covering three or four objectives at a time and given soon after those objectives have been covered. A selection of test items from the units covered may be used for a final test at the end of each term if desired. The written test is included in the teacher edition only and should be duplicated for student use.

☐ **Answers to Written Test.** An answer key is provided to assist the teacher in evaluating student performance on the written test.

☐ **Learning Activities Sheet.** This component provides a model for teachers to use in implementing a self-paced or individualized program, and guides the student through the required components in the student edition (objective sheet, information sheet, student supplements, assignment sheets, and job sheets). The teacher should modify the learning steps as needed to incorporate resources available in the classroom (videotapes, computer software, magazines, etc.) and to address instructional strategies that may be needed to enhance learning for each student. Final copies should be distributed for student use.

The following icons will be used on the learning activities sheet to denote steps that require additional resources:

📖 Read a book, magazine, or journal article

💻 Use a CBT program or other software application

W W W Access a site on the World Wide Web

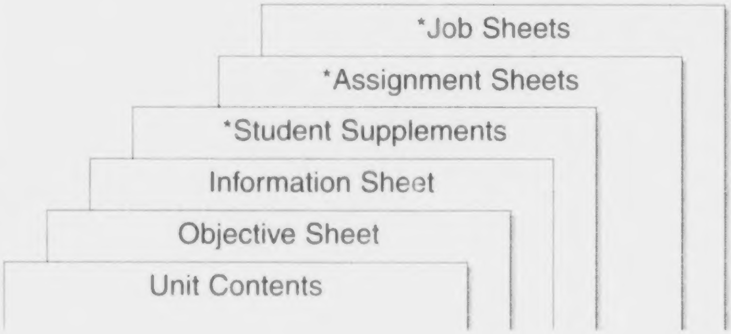
🖥 Look at PowerPoint® or other computer presentation

📼 Watch a videotape

☐ **Transparency Masters.** These overheads are used to direct the students' attention to the topic of classroom discussion. Transparencies allow the student to see as well as hear the information being presented, thus reinforcing the learning process. They may provide illustrations, charts, schematics, or additional information needed to clarify and reinforce objectives included in the unit of instruction. Some of these items may also appear with the appropriate objectives in the information sheet in the student edition. The teacher may make acetate copies from the masters or, in most cases, complete transparency sets are available for purchase.

Use of This Publication

Student Edition



*Designates components that may not appear in every unit of instruction

For best results, students should be provided with a copy of the student edition and should be allowed to take notes in the margins as additional information is provided by the instructor or as the student acquires additional information through library or Internet research.

☐ **Objective Sheet.** This component summarizes each unit for the student and teacher. The objective sheet is based on established performance objectives that state the goals for successful completion of a unit of instruction. Objectives are stated in two forms: unit objectives that state the expected performance of each student after completion of the unit and specific (enabling) objectives that state what the student must be able to do to reach the unit objective.

The objectives should be stressed throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods.

Teachers should modify, delete, or add objectives in order to meet the needs of the students and community. When objectives are added, the teacher should remember to supply the needed information, assignment and/or job sheets, and criterion-referenced test items to cover the new objectives.

☐ **Information Sheet.** This component provides the student with the essential information for meeting the cognitive objectives in the unit. Teachers will find that the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. Students should read the information sheet before the information is discussed in class. Space is provided in the margins for students and teachers to add notes that clarify and/or expand upon the information presented.

☐ **Student Supplements.** This component is included in a unit of instruction when additional information is needed in order for students to complete one or more of the assignment and/or job sheets. Students are not directly tested over the information presented in a supplement; however, their ability to apply this information may be evaluated in the completion of assignment and/or job sheets.

☐ **Assignment Sheets.** The assignment sheets address the learning levels at or above the application level of Bloom's taxonomy. They provide students with an opportunity to use higher-order thinking skills, such as problem solving, synthesizing, analyzing, and evaluating. In addition, they may provide additional opportunities for students to develop their language skills.

Assignment sheets can be paper-and-pencil activities, as well as those using computer software, videotapes, models, handouts, or other resources as appropriate. Criteria are provided to evaluate student performance objectively.

☐ **Job Sheets.** Job sheets are designed as skill tests and give the instructor direction as to the psychomotor skills to be taught and provide the criteria to evaluate student performance objectively. They also help provide potential employers with a picture of the skills being taught during training and the performances that might be reasonably expected from an individual who has completed the training.

The teacher should provide students with a copy of each job sheet and/or the procedure's manual and/or job specifications when necessary. The teacher should also discuss the equipment and materials that will be needed for the job and the criteria that will be used to evaluate the student's performance and demonstrate the procedure prior to having students practice the procedure. Safety should be stressed as part of each demonstration.

When a student is ready to be evaluated, the teacher should follow the instructions for evaluating student performance which may be found in the suggested activities component of the teacher unit.

As you use these instructional materials we hope that you will find that they contribute to the quality of your program. If any problems occur or if you have any suggestions for improvement of the materials, please write us at 1500 West Seventh Avenue, Stillwater, OK 74074-4364, or e-mail us at mavccweb@okcareertech.org.

Graphic Arts: Electronic Prepress and Publishing

Training and Competency Profile

Student Information

Program ____________________ Instructor ____________________

Name ____________________ Soc. Sec. No. ____________________

Address ____________________ Phone ____________________

Grade ____________ School ____________________

Allergies/Disabilities that might require special accommodation for training (please specify)

____

In case of emergency, contact ____________________ Phone ____________

Record of Enrollment

Date of Enrollment ____-____-____ Total Class Hours________ Total Hours Absent________

Date of Withdrawal ____-____-____ Total On-the-Job Training Hours________ Total Hours Tardy________

Date of Completion ____-____-____ Total Lab Hours________

On-the-Job Training/Work Experience

____________________ ____________________
Place of Employment Address

____________________ ____________________
Supervisor's Name Phone

____________________ ____________________
Duration of Employment Job Title

____
Job Responsibilities

____________________ ____________________
Place of Employment Address

____________________ ____________________
Supervisor's Name Phone

____________________ ____________________
Duration of Employment Job Title

____
Job Responsibilities

Training and Competency Profile

Student Evaluation

Directions: Evaluate the student using one of the rating scales below. Write the appropriate number to indicate the degree of competency achieved. The descriptions associated with each of the numbers focuses on a level of student performance for each of the tasks listed. The written test scorelines are provided for optional teacher use. They may not be applicable in all cases.

Sample A

4 **Skilled**—Can perform job with no additional training.
3 **Moderately Skilled**—Has performed job during training program; limited additional training may be required.
2 **Limited Skill**—Has performed job during training program; additional training is required to develop skill.
1 **Unskilled**—Is familiar with process, but is unable to perform job.
0 **No Exposure**—No information or practice provided during training program.

Unit 1: Introduction to Electronic Prepress

______ 1. Survey Internet or periodicals for current articles on EPP technology.
______ 2. Survey an electronic prepress workstation and rate it for ergonomic suitability.
______ 3. Collect samples of simple and complex EPP documents.
______ 4. ______________________
______ 5. ______________________

Written Test Scores
Pretest Score ________%
Posttest Score ________%

Unit 2: Electronic Prepress Systems

______ 1. Examine computer operating manual(s) for basic operating procedures.
______ 2. Complete an EPP system-specifications list.
______ 3. Determine system requirements for a page-layout software package.
______ 4. Determine basic costs of EPP systems.
______ 5. Start/Boot the computer.
______ 6. Format a disk.
______ 7. Back up a disk or other removable media.
______ 8. ______________________
______ 9. ______________________

Written Test Scores
Pretest Score ________%
Posttest Score ________%

Unit 3: Software

______ 1. Evaluate a page-layout software package.
______ 2. Examine page-layout software manual for basic operations.
______ 3. Create word-processed document.
______ 4. Practice using publication-window features.
______ 5. Practice using page-specification features.
______ 6. Practice using paragraph- and type-specification features and flow text.
______ 7. Create, edit, and move a headline.
______ 8. Place a file and then edit and move sentences within file paragraphs.

Sample B

Yes—Can perform job with no additional training.
No—Is unable to perform job satisfactorily.

______ 9. Copy/Paste, cut/paste, and move a paragraph.
______ 10. Create a letterhead.
______ 11. ______________________
______ 12. ______________________

Written Test Scores
Pretest Score ________%
Posttest Score ________%

Unit 4: Type Selection

______ 1. Measure type.
______ 2. Identify fonts available on electronic prepress workstation.
______ 3. Practice adjusting leading, kerning, and letterspacing.
______ 4. Select type using guidelines for readability and legibility.
______ 5. Perform font management activities.
______ 6. ______________________
______ 7. ______________________

Written Test Scores
Pretest Score ________%
Posttest Score ________%

Unit 5: Document Design

______ 1. Evaluate the design of a magazine ad.
______ 2. Design a single-page flyer.
______ 3. Examine illustration software manual for basic operations.
______ 4. Rescale graphics.
______ 5. Create a computer-generated grid.
______ 6. Create a single-page flyer.
______ 7. Add contrast using special effects type and screen tints.
______ 8. Create a logo design.
______ 9. Create stationery utilizing logo design.
______ 10. Create a spot color brochure.
______ 11. ______________________
______ 12. ______________________

Written Test Scores
Pretest Score ________%
Posttest Score ________%

Unit 6: Scanning

______ 1. Research copyright law in relation to scanned materials.
______ 2. Examine scanning hardware and software available in your classroom.
______ 3. Identify scanner and scan settings.
______ 4. Examine image-editing software manual for basic operations.
______ 5. Scan line art.
______ 6. Scan a continuous tone image.
______ 7. Use image-editing software to touch up and prepare line art scan for print.
______ 8. Use image-editing software to touch up and prepare continuous tone scan for print.
______ 9. Calibrate and assess a desktop scanner.
______ 10. Scan a continuous tone color original.
______ 11. Convert a continuous tone color scan to grayscale.
______ 12. Perform basic color correction.
______ 13. Use image-editing software to perform basic image cloning.
______ 14. Calibrate a color monitor.
______ 15. Place scanned graphics/photos in page-layout document.
______ 16. Scan text using OCR software.
______ 17. ______________________
______ 18. ______________________

Written Test Scores
Pretest Score ______ %
Posttest Score ______ %

Unit 7: Layout and Document Preparation

______ 1. Proofread a document.
______ 2. Determine specifications for a newsletter.
______ 3. Determine specifications for a multi-page document.
______ 4. Stack graphics and text.
______ 5. Produce a newsletter.
______ 6. Produce a multi-page document.
______ 7. Create single color layout using work-and-turn and work-and-tumble.
______ 8. Create a document using imposition.
______ 9. Create a vector drawing with trapping.
______ 10. Preflight a document.
______ 11. Collect document for output at service bureau.
______ 12. Produce customer-specified document.
______ 13. Package a file using PDF.
______ 14. Use a file compression utility for file transfer or storage.
______ 15. Transfer file using telecommunications.
______ 16. Use a backup utility to create tapes/disks.
______ 17. Use a backup utility to restores files to hard drive.
______ 18. Burn a CD.
______ 19. Perform quality control checks on film processor and imagesetter.
______ 20. ______________________
______ 21. ______________________

Written Test Scores
Pretest Score ______ %
Posttest Score ______ %

PrintED Crosswalk

The following PrintED tasks are covered in this publication. The first column identifies the PrintED task by name and number. The second column identifies the exact location by unit number and objective, assignment sheet, or job sheet in this MAVCC publication unless otherwise noted.

For more information about PrintED, contact:

Graphic Arts Education Research Foundation (GAERF)
1899 Preston White Drive
Reston, VA 22091
(703) 264-7200

PrintED Digital Image Preparation Tasks	MAVCC Tasks
Orientation	
1. Read and comprehend production information on a job jacket/ticket.	*Graphic Arts: The Press and Finishing Processes*, Unit 5, Objective 7—Components of a job ticket *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 4: Objective 7—Components of a job ticket; Assignment Sheet 3—Compare job tickets for similarities and differences, Assignment Sheet 4—Read and comprehend information on a job ticket
2. Identify the various kinds of items that can be designed and produced using desktop publishing.	Unit 1: Objective 11—Simple EPP documents; Objective 12—Complex EPP documents; Assignment Sheet 3—Collect samples of simple and complex EPP documents
3. Identify the basic principles of design (i.e. unity, contrast, page proportions, balance, etc.).	Unit 5: Objective 2—Principles of document design and factors to consider when applying them; Student Supplement 1—Effective use of proportion; Student Supplement 2—Effective use of direction; Student Supplement 3—Effective use of contrast; Student Supplement 4—Effective use of rules; Student Supplement 6—Using type and screen tints as design techniques to create contrast; Assignment Sheet 1—Evaluate the design of a magazine ad *Graphic Arts: Orientation, Composition and Paste-Up*, Unit 9: Objective 8—Principles of design; Assignment Sheet 2—Label magazine ads that utilize principles of design

PrintED Crosswalk

PrintED Digital Image Preparation Tasks	MAVCC Tasks
4. Incorporate the basic design principles in hand drawn sketches and measured layouts.	Unit 5: Assignment Sheet 1—Evaluate the design of a magazine ad; Assignment Sheet 2—Design a single-page flyer; Job Sheet 3—Create a single-page flyer
5. Identify line images. 6. Identify continuous tone/halftone images.	Unit 6, Objective 9—Scanning grayscale, line art, and RGB *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 8, Assignment Sheet 3—Identify types of art in printed material
7. Identify basic process color principles and kinds of four color printing.	Unit 6, Objective 10—Converting RGB scanned images to CMYK for print *Graphic Arts: Orientation, Composition, and Paste-Up*, Objective 10—Working with color; Assignment Sheet 4—Complete a drawing of the printer's color wheel; Assignment Sheet 5—Identify six basic color combinations in printed material
8. Identify digital color proofing techniques.	Unit 7, Objective 11—Types of proofs *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 11, Objective 3—Types of proofs
9. Identify digital image preparation and output equipment.	Unit 2: Objective 2—Major types of EPP hardware; Objective 5—Types of monitors used in EPP systems; Objective 6—Types of input devices used in EPP systems; Objective 7—Types of storage devices used in EPP systems; Objective 8—Types of output devices used in EPP systems
10. Identify basic desktop publishing equipment.	Unit 2, Objective 2—Major types of EPP hardware
11. Explain the limitations and capabilities of desktop publishing.	Unit 1: Objective 8—Factors to consider before purchasing an EPP system; Objective 10—Factors used to determine if a document is suitable for EPP
12. Identify the differences between bitmap and vector.	Unit 6, Objective 1—Terms and definitions
13. Define postscript.	Unit 2, Objective 10—PostScript and its importance to printing

PrintED Digital Image Preparation Tasks	MAVCC Tasks
14. Distinguish between word processing, page layout, and graphic software.	Unit 3: Objective 2—Types of software used in EPP systems; Objective 4—Characteristics of quality word-processing software; Objective 5—Characteristics of quality illustration software; Objective 6—Characteristics of quality image-editing software; Objective 8—Characteristics of quality page-layout software
15. Demonstrate the operation of digital image preparation.	Unit 3: Job Sheet 1—Create word-processed document; Job Sheet 2—Practice using publication-window features; Job Sheet 3—Practices using page-specification features; Job Sheet 4—Practice using paragraph- and type-specification features and flow text; Job Sheet 5—Create, edit, and move a headline; Job Sheet 6—Place a file and then edit and move sentences within file paragraphs; Job Sheet 7—Copy/paste, cut/paste, and move a paragraph; Job Sheet 8—Create a letterhead
16. Select appropriate software for word processing, graphics, scanning, and page layout.	Unit 3: Objective 3—Factors to consider before purchasing EPP software; Objective 4—Characteristics of quality word-processing software; Objective 5—Characteristics of quality illustration software; Objective 6—Characteristics of quality image-editing software; Objective 8—Characteristics of quality page-layout software; Unit 6, Objective 4—Types of scanning software
17. Demonstrate a keyboard typing proficiency of 20 WPM.	
18. Prepare a series of hand drawn sketches for layouts incorporating appropriate marks (i.e. gutters, register marks, fold lines, etc.)	Unit 5: Objective 7—Steps in the design process; Assignment Sheet 1—Evaluate the design of a magazine ad; Assignment Sheet 2—Design a single-page flyer
19. Prepare a dummy for a multipage signature.	Unit 7: Objective 13—Imposition and related terms; Job Sheet 5—Create a document using imposition
20. Identify various computer platforms.	Unit 2: Objective 3—Types of computer systems used in EPP; Objective 4—Common operating systems used in EPP

PrintED Crosswalk

PrintED Digital Image Preparation Tasks	MAVCC Tasks
21. Define removable media.	Unit 2, Objective 1—Terms and definitions
22. Define CTP.	*Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 5, Objective 6—Specialized printing processes *Graphic Arts: Process Camera, Stripping, and Platemaking*, Unit 8: Objective 1—Terms and definitions; Objective 2—Types of digital printing systems; Objective 3—Computer-to-plate printing systems
Type	
1. Measure copy/text in points and picas using a line gauge. 2. Measure type using a typesizing gauge.	Unit 4, Assignment Sheet 1—Measure type *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7, Assignment Sheet 2—Measure type
3. Identify x-height, mean-line, base-line, ascenders, descenders, and their roles in measuring and designing with type.	Unit 4, Objective 3—Anatomy of a type character *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7, Objective 2—Parts of a type character
4. Identify caps, lowercase, uppercase, small caps and ligatures.	Unit 4: Objective 1—Terms and definitions; Objective 2—Punctuation marks and symbols used in EPP *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7, Objective 1—Terms and definitions
5. Define dingbats, bullets, rules, and symbols and their uses in publications.	Unit 4, Objective 2—Punctuation marks and symbols used in EPP
6. Distinguish between display (headline) type and body (text) type by their point sizes and styles.	Unit 4, Objective 1—Terms and definitions *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7, Objective 1—Terms and definitions
7. Identify the basic type styles and their uses.	Unit 4, Objective 5—Definitions of the terms typeface, type family, typestyles, and font

PrintED Digital Image Preparation Tasks	MAVCC Tasks
8. Distinguish between serif and sans serif type styles.	Unit 4: Objective 6—Typeface classifications; Assignment Sheet 2—Identify fonts available on electronic prepress workstation *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7: Objective 3—Classifications of typefaces; Assignment Sheet 1—Identify typeface classes in printed material
9. Explain letterspacing, tracking, and kerning of type characters. 10. Explain wordspacing and the relation of em and en in paragraph spacing. 11. Define linespacing and explain the measurement principles for the leading of text.	Unit 4: Objective 4—Basic type measurements; Objective 7—Type adjustments commonly required in EPP; Assignment Sheet 1—Measure type; Job Sheet 1—Practice adjusting leading, kerning, and letterspacing *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7, Objective 5—Measuring type; Assignment Sheet 2—Measure type
12. Define the type arrangements: flush left-ragged right, flush right-ragged left, centered, and justified.	Unit 3, Student Supplement 1—Examples of page-layout specification features; Unit 5, Objective 5—Types of text treatments *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 7: Objective 6—Formats of type composition; Assignment Sheet 3—Identify formats of type composition
13. Explain the difference between postscript type and truetype.	Unit 4, Objective 10—Types of font technologies
14. Understand font management from customer's files.	Unit 4: Objective 11—Font issues to consider when sending EPP files to an output service provider; Objective 12—Characteristics of font management utilities; Objective 13—Font transferability issues; Assignment Sheet 2—Identify fonts available on electronic prepress workstation; Job Sheet 3—Perform font management activities
Page Layout	
1. Select appropriate page layout software for a given job.	Unit 3: Objective 3—List factors to consider before purchasing EPP software; Objective 8—Characteristics of quality page-layout software; Assignment Sheet 1—Evaluate a page-layout software package

PrintED Crosswalk

PrintED Digital Image Preparation Tasks	MAVCC Tasks
2. Demonstrate the use of an electronic dictionary, spell checker, and automatic hyphenation.	
3. Demonstrate a functional knowledge of computer menus and palette for the software in use.	Unit 3: Objective 9—Basic page-layout software features; Objective 11—Page-setup features; Objective 12—Paragraph-specification features; Objective 13—Type-specification features; Assignment Sheet 2—Evaluate page-layout software manual for basic operations; Job Sheet 2—Practice using publication-window features; Job Sheet 3—Practice using page-specification features; Job Sheet 4—Practice using paragraph- and type-specification features and flow text
4. Demonstrate text alignment, element positioning and rules of page design for printed matter.	Unit 3: Objective 12—Paragraph-specification features; Student Supplement 1—Examples of page-layout specification features; Job Sheet 4—Practice using paragraph- and type-specification features and flow text; Unit 5, Job Sheet 3—Create a single-page flyer
5. Set up column grids for electronic page layout according to job specifications.	Unit 5, Job Sheet 2—Create a computer-generated grid
6. Proofread manuscript copy and make necessary corrections using basic proofreading marks.	Unit 7: Objective 7—Standard proofreaders' marks; Assignment Sheet 1—Proofread a document *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 11: Objective 4—Proofreaders' marks; Assignment Sheet 1—Read and mark proof copy
7. Set-up/select appropriate pagination for a given job.	Unit 7, Job Sheet 3—Produce a multi-page document
8. Set text with appropriate margins, formatting, gutters, leading headings.	Unit 3: Job Sheet 3—Practice using page-specification features; Job Sheet 8—Create a letterhead; Unit 5: Job Sheet 3—Create a single-page flyer; Job Sheet 6—Create stationery utilizing logo design; Unit 7: Job Sheet 2—Produce a newsletter; Job Sheet 3—Produce a multi-page document; Job Sheet 9—Produce customer-specified document

PrintED Digital Image Preparation Tasks	MAVCC Tasks
9. Import copy from word processing program to page layout program according to job specifications.	Unit 3: Job Sheet 4—Practice using paragraph- and type-specification features and flow text; Job Sheet 6—Place a file and then edit and move sentences within file paragraphs; Unit 7: Job Sheet 2—Produce a newsletter; Job Sheet 3—Produce a multi-page document
10. Design and produce a document using desired fonts, styles, margins, indents, and tabs.	Unit 3: Job Sheet 5—Create, Edit, and Move a Headline; Job Sheet 8—Create a letterhead; Unit 5: Job Sheet 3—Create a single-page flyer; Job Sheet 6—Create stationery utilizing logo design; Job Sheet 7—Create a spot-color brochure; Unit 7: Job Sheet 2—Produce a newsletter; Job Sheet 3—Produce a multi-page document; Job Sheet 9—Produce customer-specified document
11. Proofread, edit and make corrections/adjustment to copy on screen.	Unit 5, Job Sheet 3—Create a single-page flyer; Unit 7: Job Sheet 2—Produce a newsletter; Job Sheet 3—Produce a multi-page document; Job Sheet 9—Produce customer-specified document
12. Place graphics from an existing file into a publication.	Unit 3: Job Sheet 3—Create a single-page flyer; Job Sheet 6—Create stationery utilizing logo design; Job Sheet 7—Create a spot-color brochure; Unit 6, Job Sheet 11—Place scanned graphics/photos in page-layout document; Unit 7: Job Sheet 2—Produce a newsletter; Job Sheet 3—Produce a multi-page document
13. Demonstrate the procedure for cropping graphics electronically.	Unit 5, Job Sheet 6—Create stationery utilizing logo design
14. Create a 2 sided, 3 panel brochure using graphics and text for publication.	Unit 5, Job Sheet 7—Create a spot-color brochure
15. Create a 4 page newsletter using windows, blocks, text, graphics, frames and headings. 16. Create a 2 page newsletter using drop caps for paragraph openings, wrap-a-rounds (run-a-rounds) and graphics.	Unit 7, Job Sheet 2—Produce a newsletter (one page)

PrintED Digital Image Preparation Tasks	MAVCC Tasks
17. Create a printed piece using tints, reverses and manipulated type for effect.	Unit 5, Job Sheet 4—Add contrast using special effects type and screen tints
18. Produce a multicolor flyer by outputting individual spot colors.	
19. Demonstrate a knowledge of available page layout programs—capabilities, advantages, disadvantages.	Unit 3, Assignment Sheet 1—Evaluate a page-layout software package
20. Identify DPI, LPI, and PPI. 21. Compare and contrast DPI and PPI.	Unit 6, Objective 6—PPI, DPI, and LPI
22. Demonstrate knowledge of scaling.	Unit 5, Job Sheet 1—Rescale graphics
23. List two raster programs.	
Scanning Operations	
1. Identify scanner hardware and its basic components and operations.	Unit 6, Objective 2—Types of scanners
2. Identify basic scanner software, its uses and limitations.	Unit 6, Objective 4—Types of scanning software
3. Demonstrate appropriate scanner/program operations for line artwork.	Unit 6, Job Sheet 1—Scan line art
4. Demonstrate appropriate scanner/program operations for continuous tone copy.	Unit 6: Job Sheet 2—Scan a continuous tone image; Job Sheet 6—Scan a continuous tone color original
5. Place scanned graphics/photos into existing page layout.	Unit 6, Job Sheet 11—Place scanned graphics/photos in page-layout document
Graphics	
1. Demonstrate a functional knowledge of commands/codes/menus and procedures for their uses.	Unit 5: Assignment Sheet 3—Examine illustration software manual for basic operations; Job Sheet 5—Create a logo design; Job Sheet 7—Create a spot-color brochure; Unit 6: Assignment Sheet 4—Examine image-editing software manual for basic operations; Job Sheet 3—Use image-editing software to touch up and prepare line art scan for print; Job Sheet 4—Use image-editing software to touch up and prepare continuous tone scan for print; Job Sheet 9—Use image-editing software to perform basic image cloning

PrintED Digital Image Preparation Tasks	MAVCC Tasks
2. Draw a design appropriate for a given job using a graphics program.	Unit 5, Job Sheet 5—Create a logo design
3. Create a design using tints and fills for a given job using a graphics program.	Unit 5, Job Sheet 7—Create a spot-color brochure; Unit 7, Job Sheet 6—Create a vector drawing with trapping
4. Create a design using manipulated type (rotated, circled, extended, etc.) for a publication.	Unit 5, Job Sheet 4—Add contrast using special effects type and screen tints
5. Trace a drawing/photograph using a graphics program.	Unit 5, Job Sheet 7—Create a spot-color brochure
6. Create a design/publication using electronic clip art.	Unit 5: Job Sheet 3—Create a single-page flyer; Job Sheet 5—Create a logo design
7. Observe a digital image preparation area at a commercial printer.	Unit 1, Teaching Suggestions

PrintED Crosswalk

PrintED Advanced Digital Image Preparation Tasks	MAVCC Tasks
1. Read and comprehend production information on job jacket/ticket.	*Graphic Arts: The Press and Finishing Processes*, Unit 5, Objective 7—Components of a job ticket *Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 4: Objective 7—Components of a job ticket; Assignment Sheet 3—Compare job tickets for similarities and differences, Assignment Sheet 4—Read and comprehend information on a job ticket
2. Identify basic color theory.	*Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 9: Objective 10—Working with color; Assignment Sheet 4—Complete a drawing of the printer's color wheel; Assignment Sheet 5—Identify six basic color combinations in printed material
3. Describe the application of digital photography in electronic imaging.	Unit 2, Objective 6—Types of input devices used in EPP systems
4. List the capabilities and functions of imagesetters.	Unit 2, Objective 8—Types of output devices used in EPP systems
5. Identify and compare digital proofing systems.	Unit 7, Objective 11—Types of proofs
6. Identify network operating systems.	Unit 2, Objective 11—Networking overview
7. Describe the current systems/techniques for outputting files direct to plate material.	*Graphic Arts: Process Camera, Stripping, and Platemaking*, Unit 8, Objective 3—Computer-to-plate printing systems
8. Demonstrate an understanding of the PostScript page description language.	Unit 2, Objective 10—PostScript and its importance to printing; Unit 7: Objective 21—PostScript error descriptions; Objective 22—Common PostScript errors and troubleshooting procedures
9. List the advantages and disadvantages of different storage media, such as syquest, optical, jaz, and zip. 10. List the use and capabilities of storage devices for electronic imaging work, transport and storage.	Unit 2, Objective 7—Types of storage devices used in EPP systems

PrintED Advanced Digital Image Preparation Tasks	MAVCC Tasks
11. Describe the strengths and weaknesses of TIFF, EPS, PICT, PDF, and DCS in a PostScript environment.	Unit 6, Objective 5—File formats for scanned images
12. Translate files from WIN to Mac formats and Mac to WIN.	Unit 7, Objective 24—Macintosh-to-Windows and Windows-to-Macintosh file conversion
13. Use a file compression utility for file transfer or storage.	Unit 7: Objective 19—Types of file compression; Job Sheet 11—Use a file compression utility for file transfer or storage
14. Describe the differences between TrueType and PostScript fonts.	Unit 4, Objective 10—Types of font technologies
15. Create a single color layout using clip art.	Unit 5: Job Sheet 3—Create a single-page flyer; Job Sheet 5—Create a logo design
16. Create a single color layout using work and turn/work & tumble.	Unit 7: Objective 12—Work-and-turn and work-and-tumble printing processes; Job Sheet 4—Create a single color layout using work-and-turn and work-and-tumble
17. Change contrast using tint screens and shading techniques.	Unit 5: Student Supplement 6—Using type and screen tints as design techniques to create contrast; Job Sheet 4—Add contrast using special effects type and screen tints
18. Create logo design on computer and integrate into a brochure design.	Unit 5: Job Sheet 5—Create a logo design; Job Sheet 6—Create stationery utilizing logo design
19. Produce curved or special effects type using a graphics application.	Unit 5: Objective 6—Types of graphic enhancements; Job Sheet 4—Add contrast using special effect type and screen tints
20. Produce a job on the computer using electronic imposition.	Unit 7: Objective 13—Imposition and related terms; Job Sheet 5—Create a document using imposition
21. Create a job that incorporates electronic trapping	Unit 7: Objective 14—Color trapping and related terms; Objective 15—Statements concerning trapping; Job Sheet 6—Create a vector drawing with trapping
22. Produce a multicolor job that includes scans, text and spot color artwork.	

PrintED Crosswalk

PrintED Advanced Digital Image Preparation Tasks	MAVCC Tasks
23. Collect for output all elements of a page layout.	Unit 7: Objective 17—Items that should be collected for output and sent to service bureau/print shop with print job; Job Sheet 8—Collect document for output at service bureau
24. Follow instructions to produce, modify or according to customer supplied criteria.	Unit 7, Job Sheet 9—Produce customer-specified document
25. Use OCR software to capture text.	Unit 6, Job Sheet 12—Scan text using OCR software
26. Create logo based on scanned template.	Unit 5, Job Sheet 7—Create a spot-color brochure
27. Calibrate a desktop scanner for producing halftone scans.	Unit 6, Job Sheet 5—Calibrate and assess a desktop scanner
28. Produce a halftone using a desktop scanner. 29. Scan a continuous tone color original and convert to B/W.	Unit 6, Job Sheet 7—Convert a continuous tone color original scan to grayscale
30. Calibrate a desktop scanner for producing color scans.	Unit 6, Job Sheet 5—Calibrate and assess a desktop scanner
31. Produce a color scan.	Unit 6, Job Sheet 6—Scan a continuous tone color original
32. Use a photo manipulation program to perform basic color correction and basic image cloning.	Unit 6: Job Sheet 8—Perform basic color correction; Job Sheet 9—Use image-editing software to perform basic image cloning
33. Perform font management activities.	Unit 4: Objective 12—Font management utilities; Job Sheet 3—Perform font management activities
34. Use backup utility to create backup tapes, cartridges, CDR or diskettes.	Unit 7: Objective 23—Backup utilities; Job Sheet 13—Use a backup utility to create tapes/disks
35. Use backup utility to restore files to the hard drive or diskette.	Unit 7: Objective 23—Backup utilities; Job Sheet 14—Use a backup utility to restores files to hard drive

PrintED Advanced Digital Image Preparation Tasks	MAVCC Tasks
36. Perform system troubleshooting procedures.	Unit 2, Student Supplement 2—Common Macintosh system troubleshooting procedures
37. Demonstrate troubleshooting procedures for PostScript errors, such as limitcheck.	Unit 7: Objective 21—PostScript error descriptions; Objective 22—Common PostScript errors and their solutions
38. Calibrate a color monitor.	Unit 6, Job Sheet 10—Calibrate a color monitor
39. Describe how to calibrate an imagesetter.	Unit 7, Teaching Suggestions
40. Describe how film processor variations effect final output. 41. Calibrate and perform quality control checks on the film processor.	Unit 7: Objective 25—Imagesetter and film processor quality control checks; Job Sheet 16—Perform quality control checks on film processor and imagesetter
42. Explain the use of quality control data.	*Graphic Arts: Orientation, Composition, and Paste-Up*, Unit 4, Objective 6—Quality control
43. Perform tone correction using curves and unsharp masking.	Unit 6: Job Sheet 4—Use image-editing software to touch up and prepare continuous tone scan for print; Job Sheet 8—Perform basic color correction
44. Adjust image for printing on a variety of subtracts (coated vs. uncoated sheets).	Unit 6: Objective 8—Scanning resolutions and scanner settings; Assignment Sheet 3—Identify scanner and scan settings
45. Explain dot gain and its effect on the prep of an image file.	Unit 6, Objective 8—Scanning resolutions and scanner settings
46. Perform conversion of bitmapped art to vector art.	
47. Demonstrate knowledge of densitometry.	Unit 7, Objective 1—Terms and definitions
48. Demonstrate knowledge of PPI, LPI, DPI relationships.	Unit 6, Objective 6—PPI, DPI, and LPI
49. Explain UCR/GCR settings.	
50. Perform rescreening functions and demonstrate knowledge of screen angles.	
51. Explain limitations of RGB to CMYK conversion.	Unit 6: Objective 10—Converting RGB scanned images to CMYK for print; Job Sheet 6—Scan a continuous tone color original

PrintED Crosswalk

PrintED Advanced Digital Image Preparation Tasks	MAVCC Tasks
52. Describe proper plate/film exposure quality control.	Unit 7: Objective 25—Imagesetter and film processor quality control checks; Job Sheet 16—Perform quality control checks on film processor and imagesetter
53. Perform preflight/file repair procedures.	Unit 7: Objective 16—Preflight check and its role in successful job completion; Job Sheet 7—Preflight a document
54. Perform PPI/sizing calculations for desktop scanner.	Unit 6: Objective 8—Scanning resolutions and scanner settings; Assignment Sheet 3—Identify scanner and scan settings

Instructional/Task Analysis

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Unit 1: Introduction to Electronic Prepress

1. Terms and definitions
2. Definition of electronic prepress (EPP)
3. Basic elements of an EPP system
4. Typical steps in the EPP process
5. Benefits of EPP
6. Typical EPP job classifications
7. Characteristics of a professional EPP operator
8. Factors to consider before purchasing an EPP system
9. Characteristics of a quality EPP work environment
10. Factors used to determine if a document is suitable for EPP
11. Simple EPP documents
12. Complex EPP documents
13. Sources of EPP information
14. Copyright law applying to EPP
15. Elements in an official U.S. copyright notice
16. Survey Internet or periodicals for current articles on EPP technology
17. Survey an electronic prepress workstation and rate it for ergonomic suitability
18. Collect samples of simple and complex EPP documents

Unit 2: Electronic Prepress Systems

1. Terms and definitions
2. Major types of EPP hardware
3. Types of computer systems used in EPP
4. Common operating systems used in EPP
5. Types of monitors used in EPP systems
6. Types of input devices used in EPP systems

Instructional/Task Analysis

Unit 2: Electronic Prepress Systems (continued)

Related Information: What the Student Should Know

7. Characteristics of types of storage devices used in EPP systems
8. Types of output devices used in EPP systems
9. Common features of low-end and high-end output devices used in EPP systems
10. PostScript and its importance to printing
11. Networking

Application: What the Student Should Be Able to Do

12. Examine computer operating manual(s) for basic operating procedures
13. Complete an EPP system-specifications list
14. Determine system requirements for a specific software package
15. Determine basic costs of EPP systems
16. Start/Boot the computer
17. Format a disk
18. Back up a disk or other removable media

Unit 3: Software

Related Information: What the Student Should Know

1. Terms and definitions
2. Types of software used in EPP systems
3. Factors to consider before purchasing EPP software
4. Characteristics of quality word-processing software
5. Characteristics of quality illustration software
6. Characteristics of quality image-editing software
7. Characteristics of quality preflight software
8. Characteristics of quality page-layout software
9. Basic page-layout software features
10. Basic page-layout software text-tool operations
11. Page-setup features
12. Paragraph-specifications features
13. Type-specification features
14. Editing features
15. Problems encountered when using office software for print production

Application: What the Student Should Be Able to Do

16. Evaluate a page-layout software package
17. Examine page-layout software manual for basic operations
18. Create word-processed document
19. Practice using publication-window features
20. Practice using page-specification features
21. Practice using paragraph- and type-specification features and flow text
22. Create, edit, and move a headline
23. Place a file and then edit and move sentences within file paragraphs
24. Copy/paste, cut/paste, and move a paragraph
25. Create a letterhead

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Unit 4: Type Selection

1. Terms and definitions
2. Terms related to punctuation marks and symbols used in EPP
3. Anatomy of a type character
4. Basic type measurements
5. Difference among the terms typeface, type family, typestyle, and font
6. Typeface classifications
7. Type adjustments commonly required in EPP
8. Factors affecting readability and legibility in typographic materials
9. Font characteristics
10. Types of font technologies
11. Font issues to consider when sending EPP files to an output service provider
12. Font management utilities
13. Font transferability issues
14. Measure type
15. Identify fonts available on electronic prepress workstation
16. Practice adjusting leading, kerning, and letterspacing
17. Select type using guidelines for readability and legibility
18. Perform font management activities

Unit 5: Document Design

1. Terms and definitions
2. Factors to consider when applying principles of document design
3. Definitions of types of design elements
4. Types of graphic treatments
5. Types of text treatments
6. Types of graphic enhancements
7. Steps in the design process
8. Evaluate the design of a magazine ad
9. Design a single-page flyer
10. Examine illustration software manual for basic operations
11. Rescale graphics
12. Create a computer-generated grid
13. Create a single-page flyer
14. Add contrast using special effects type and screen tints
15. Create a logo design
16. Create stationery utilizing logo design
17. Create a spot color brochure

Instructional/Task Analysis

Unit 6: Scanning

Related Information: What the Student Should Know

1. Terms and definitions
2. Types of scanners
3. Common features of flatbed scanners
4. Types of scanning software
5. File formats for scanned images
6. PPI, DPI, and LPI
7. Factors that determine scanning resolution
8. Scanning resolutions and scanner settings
9. When to scan images as grayscale, line art, and RGB
10. Converting RGB scanned images to CMYK for print
11. Moiré patterns and how to avoid them
12. Scanning guidelines
13. Common features of image-editing software

Application: What the Student Should Be Able to Do

14. Research copyright law in relation to scanned materials
15. Examine scanning hardware and software available in your classroom
16. Identify scanner and scan settings
17. Examine image-editing software manual for basic operations
18. Scan line art
19. Scan a continuous tone image
20. Use image-editing software to touch up and prepare line art scan for print
21. Use image-editing software to touch up and prepare continuous tone scan for print
22. Calibrate and assess a desktop scanner
23. Scan a continuous tone color original
24. Convert a continuous tone color scan to grayscale
25. Perform basic color correction
26. Use image-editing software to perform basic image cloning
27. Calibrate a color monitor
28. Place scanned graphics/photos in page-layout document
29. Scan text using OCR software

Unit 7: Layout and Document Preparation

1. Terms and definitions
2. Typical steps in an EPP layout process
3. Methods of editing text
4. Methods of editing graphics
5. Stacking text and graphics
6. Document-size commands and their effect on printer production
7. Standard proofreaders' marks

Unit 7: Layout and Document Preparation (continued)

Related Information: What the Student Should Know

8. Steps in proofreading documents
9. Elements of a newsletter
10. Elements of a multi-page document
11. Types of proofs
12. Work-and-turn and work-and-tumble printing processes
13. Terms associated with imposition
14. Terms associated with color trapping
15. Trapping
16. Preflight check and its role in successful job completion
17. Items that should be collected for output and sent to service bureau/print shop with print job
18. Benefits of PDF files
19. Types of file compression
20. Methods of transferring files
21. PostScript error descriptions
22. Common PostScript errors and their solutions
23. Backup utilities
24. Macintosh-to-Windows and Windows-to-Macintosh file conversion
25. Imagesetter and film processor quality control checks

Application: What the Student Should Be Able to Do

26. Proofread a document
27. Determine specifications for a newsletter
28. Determine specifications for a multi-page document
29. Stack graphics and text
30. Produce a newsletter
31. Produce a multi-page document
32. Create single color layout using work-and-turn and work-and-tumble
33. Create a document using imposition
34. Create a vector drawing with trapping
35. Preflight a document
36. Collect document for output at service bureau
37. Produce customer-specified document
38. Package a file using PDF
39. Use a file compression utility for file transfer or storage
40. Transfer file using telecommunications
41. Use a backup utility to create tapes/disks
42. Use a backup utility to restore files to hard drive
43. Burn a CD
44. Perform quality control checks on film processor and imagesetter

Basic Skills Icons and Classifications

To assist teachers and students in identifying and documenting where academic and workplace skills are being taught, MAVCC has adopted a system that uses icons and a list of specific tasks to identify the skill or skills that are used in each assignment sheet and job sheet.

A matrix for each of the ten broad skill areas has been included in this edition and reflects key elements from *What Work Requires of Schools: A SCANS Report for America 2000*, a 1991 study by the U.S. Department of Labor; *Workplace Basics: The Skills Employers Want*, a three-year study conducted jointly by the American Society for Training and Development (ASTD) and the United States Department of Labor (DOL); and other national and state sources.

When an activity involving one of these basic skills is identified, the corresponding icon is placed on the assignment sheet and job sheet. Skills training is further defined by classifying specific skills that are required.

Each of the ten broad skill areas—reading, writing, mathematics, science, oral communication, interpersonal or relating, critical thinking, employability, social studies, and technology—is represented by the icon presented below.

Reading Skills

- Reading Comprehension
- Research/Reference
- Functional Reading

Writing Skills

- Language
- Composition
- Research
- Functional Writing

Mathematics Skills

- Operation and Calculation
- Math Application
- Data Analysis and Display
- Functional Math

Basic Skills Icons and Classifications

Science Skills

- General Science
- Life Science
- Physical Science
- Earth Science

Oral Communication Skills

- Oral Presentation
- Listening
- Interactive Communication

Interpersonal or Relating Skills

- General Relating
- Teamwork/Cooperation
- Leadership/Influence

Critical Thinking Skills

- Cognitive Activities

Employability Skills

- Job Search/Selections
- Job Acquisition/Development
- Resource Management
- Job Safety

Social Studies Skills

- Information Analysis
- Social Studies Application
- Functional Social Studies

Technology Skills

- Selection
- Application
- Maintenance/Troubleshooting

Unit 1: Introduction to Electronic Prepress

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
16	Survey Internet or periodicals for current articles on EPP technology (A.S. 1)		Reading	Reading comprehension	Gain factual information; comprehend written information for main ideas
				Research/ reference	Locate resources; use magazines and newspapers; use computer
				Functional reading	Follow written instructions
			Writing	Language	Use standard grammar, spelling, and capitalization; state ideas clearly
				Composition	Compose reports
17	Survey an electronic prepress workstation and rate it for ergonomic suitability (A.S. 2)		Reading	Functional reading	Follow written instructions
			Writing	Composition	Compose reports
		?	Critical Thinking	Cognitive activities	Collect/record information; identify critical elements/issues; draw conclusions
18	Collect samples of simple and complex EPP documents (A.S. 3)		Reading	Functional reading	Follow written instructions
			Oral Communication	Oral presentation	Make informative presentations

Basic Skills Matrix

Unit 2: Electronic Prepress Systems

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
12	Examine computer operating manual(s) for basic operating procedures (A.S. 1)	📚	Reading	Reading comprehension	Determine what information is needed
		✎	Writing	Language	State ideas clearly
		💡	Critical Thinking	Cognitive activities	Collect/record information
13	Complete an EPP system-specifications list (A.S. 2)	📚	Reading	Functional reading	Follow written instructions
		✎	Writing	Language	State ideas clearly
		🗣	Oral Communication	Listening	Apply active listening skills
				Interactive communication	Conduct interviews
14	Determine system requirements for a specific software package (A.S. 3)	📚	Reading	Reading comprehension	Gain factual information; determine what information is needed
				Functional reading	Follow written instructions
		✎	Writing	Language	State ideas clearly
		💡	Critical Thinking	Cognitive activities	Collect/record information; analyze information; draw conclusions
15	Determine basic costs of EPP systems (A.S. 4)	📚	Reading	Functional reading	Follow written instructions
		2 7 +6 4 5	Mathematics	Operation and calculation	Perform basic computations
				Data analysis and display	Collect/record data

Unit 2: Electronic Prepress Systems (continued)

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
		🗣	Oral Communication	Listening	Apply active listening skills
				Interactive communication	Apply questioning techniques
		💡	Critical Thinking	Cognitive activities	Analyze information; draw conclusions; evaluate alternatives
16	Start/Boot the computer (J.S. 1)	📚	Reading	Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
17	Format a disk (J.S. 2)	📚	Reading	Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
18	Back up a disk or other removable media (J.S.3)	📚	Reading	Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Basic Skills Matrix

Unit 3: Software

Academic and Workplace Skills					
Obj. #	**Objective**	**Icon**	**Skill**	**Sub Skill**	**Description**
16	Evaluate a page-layout software package (A.S. 1)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
		✎	Writing	Language	State ideas clearly
		💡	Critical Thinking	Cognitive activities	Analyze information; draw conclusions
17	Examine page-layout software manual for basic operations (A.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task; determine what information is needed
		✎	Writing	Language	State ideas clearly
				Functional writing	Write instructions
18	Create word-processed document (J.S. 1)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
19	Practice using publication-window features (J.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task; determine what information is needed
				Functional reading	Follow written instructions
		✎	Writing	Language	State ideas clearly
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
20	Practice using page-specification features (J.S 3)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task; determine what information is needed
				Functional reading	Follow written instructions
		✎	Writing	Language	State ideas clearly

Unit 3: Software (continued)

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
21	Practice using paragraph- and type-specification features and flow text (J.S. 4)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
22	Create, edit, and move a headline (J.S. 5)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
23	Place a file and then edit and move sentences within file paragraphs (J.S. 6)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
24	Copy/Paste, cut/paste, and move a paragraph (J.S. 7)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
25	Create a letterhead (J.S. 8)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Basic Skills Matrix

Unit 4: Type Selection

Academic and Workplace Skills					
Obj. #	**Objective**	**Icon**	**Skill**	**Sub Skill**	**Description**
14	Measure type (A.S. 1)	📚	Reading	Functional reading	Follow written instructions
		🔢	Mathematics	Functional math	Make measurements
15	Identify fonts available on electronic prepress workstation (A.S. 2)	📚	Reading	Functional reading	Follow written instructions
		💡	Critical Thinking	Cognitive activities	Collect/record information; see relationship between two or more ideas, objects, or situations
16	Practice adjusting leading, kerning, and letterspacing (J.S. 1)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
17	Select type using guidelines for readability and legibility (J.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		💡	Critical Thinking	Cognitive activities	Transfer knowledge/training to new situations
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
18	Perform font management activities (J.S. 3)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		💡	Critical Thinking	Cognitive activities	Transfer knowledge/training to new situations
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Unit 5: Document Design

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
8	Evaluate the design of a magazine ad (A.S. 1)	📚	Reading	Functional reading	Follow written instructions
		✎	Writing	Language	State ideas clearly
		💡	Critical Thinking	Cognitive activities	Define a problem; draw conclusions; transfer knowledge/training to new situations
9	Design a single-page flyer (A.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		✎	Writing	Language	State ideas clearly
		💡	Critical Thinking	Cognitive activities	Transfer knowledge/training to new situations
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
10	Examine illustration software manual for basic operations (A.S. 3)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task; determine what information is needed
		✎	Writing	Language	State ideas clearly
				Functional writing	Write instructions
11	Rescale graphics (J.S. 1)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		🔢	Mathematics	Functional math	Apply computation skills as they are actually used on the job; use measuring device to construct lines and angles; calculate measurements taken from measuring devices
12	Create a computer-generated grid (J.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions

Basic Skills Matrix

Unit 5: Document Design (continued)

Academic and Workplace Skills					
Obj. #	**Objective**	**Icon**	**Skill**	**Sub Skill**	**Description**
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
13	Create a single-page flyer (J.S. 3)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
14	Add contrast using special effects type and screen tints (J.S. 4)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
15	Create a logo design (J.S. 5)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
16	Create stationery utilizing logo design (J.S. 6)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
17	Create a spot-color brochure (J.S. 7)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Unit 6: Scanning

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
14	Research copyright law in relation to scanned materials (A.S. 1)	📚	Reading	Reading comprehension	Gain factual information; comprehend written information for main ideas; determine what information is needed
				Research/ reference	Select useful resources; locate resources; use computer; use magazines and newspapers
		✏	Writing	Language	State ideas clearly
15	Examine scanning hardware and software available in your classroom (A.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
		✏	Writing	Language	State ideas clearly
		💡	Critical Thinking	Cognitive activities	Analyze information; draw conclusions
16	Identify scanner and scan settings (A.S. 3)	📚	Reading	Reading comprehension	Determine what information is needed
		🔢	Mathematics	Operation and calculation	Perform basic computations
				Math application	Select/apply mathematical formula
				Functional math	Apply computation skills as they are used on the job
		💡	Critical Thinking	Cognitive activities	Identify critical elements/issues; draw conclusions; devise a solution; transfer knowledge/training to new situations
17	Examine image-editing software manual for basic operations (A.S. 4)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task; determine what information is needed
		✏	Writing	Language	State ideas clearly
				Functional writing	Write instructions
18	Scan line art (J.S. 1)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Basic Skills Matrix

Unit 6: Scanning (continued)

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
19	Scan a continuous tone image (J.S. 2)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
20	Use image-editing software to touch up and prepare line art scan for print (J.S. 3)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
21	Use image-editing software to touch up and prepare continuous tone scan for print (J.S. 4)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
22	Calibrate and assess a desktop scanner (J.S. 5)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
				Maintenance/ Troubleshooting	Perform maintenance on equipment, including computers and other technologies; identify and correct problems with equipment
23	Scan a continuous tone color original (J.S. 6)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Unit 6: Scanning (continued)

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
24	Convert a continuous tone color scan to grayscale (J.S. 7)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Selection	Choose procedures, tools, or equipment that will produce the desired results
				Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
25	Perform basic color correction (J.S. 8)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Selection	Choose procedures, tools, or equipment that will produce the desired results
				Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
26	Use image-editing software to perform basic image cloning (J.S. 9)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Selection	Choose procedures, tools, or equipment that will produce the desired results
				Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
27	Calibrate a color monitor (J.S. 10)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
				Maintenance/ Troubleshooting	Perform maintenance on equipment, including computers and other technologies; identify and correct problems with equipment

Basic Skills Matrix

Unit 6: Scanning (continued)

Academic and Workplace Skills					
Obj. #	**Objective**	**Icon**	**Skill**	**Sub Skill**	**Description**
28	Place scanned graphics/photos in page-layout document (J.S. 11)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
29	Scan text using OCR software (J.S. 12)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Unit 7: Layout and Document Preparation

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
26	Proofread a document (A.S. 1)		Reading	Functional reading	Follow written instructions; proofs copy
			Writing	Composition	Construct symbols
27	Determine specifications for a newsletter (A.S. 2)		Reading	Functional reading	Follow written instructions
			Mathematics	Functional math	Make measurements
28	Determine specifications for a multi-page document (A.S. 3)		Reading	Functional reading	Follow written instructions
			Mathematics	Functional math	Make measurements
29	Stack graphics and text (J.S. 1)		Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
			Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
30	Produce a newsletter (J.S. 2)		Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions; proofs copy
			Technology	Selection	Choose procedure or tools that will produce the desired results
				Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
31	Produce a multi-page document (J.S. 3)		Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions; proofs copy
			Technology	Selection	Choose procedure or tools that will produce the desired results

Basic Skills Matrix

Unit 7: Layout and Document Preparation (continued)

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
				Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
32	Create single color layout using work-and-turn and work-and-tumble (J.S. 4)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
33	Create a document using imposition (J.S. 5)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
34	Create a vector drawing with trapping (J.S. 6)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
35	Preflight a document (J.S. 7)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		?	Critical Thinking	Cognitive activities	Identify critical elements, define a problem; identify underlying causes; draw conclusions; devise a solution
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
36	Collect document for output at service bureau (J.S. 8)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Unit 7: Layout and Document Preparation (continued)

Academic and Workplace Skills

Obj. #	Objective	Icon	Skill	Sub Skill	Description
37	Produce customer-specified document (J.S. 9)	📚	Reading	Reading comprehension	*Analyze and apply what has been read* to specific task
				Functional reading	Follow written instructions; proofs copy
		?	Critical Thinking	Cognitive activities	Identify critical elements; define a problem; identify underlying causes; draw conclusions; devise a solution
		⚛	Technology	Selection	Choose procedure or tools that will produce the desired results
				Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
38	Package a file using PDF (J.S. 10)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
39	Use a file compression utility for file transfer or storage (J.S. 11)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
40	Transfer file using telecommunications (J.S. 12)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
41	Use a backup utility to create tapes/disks (J.S. 13)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers

Basic Skills Matrix

Unit 7: Layout and Document Preparation (continued)

Academic and Workplace Skills					
Obj. #	**Objective**	**Icon**	**Skill**	**Sub Skill**	**Description**
42	Use a backup utility to restore files to hard drive (J.S. 14)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
43	Burn a CD (J.S. 15)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
44	Perform quality control checks on film processor and imagesetter (J.S. 16)	📚	Reading	Reading comprehension	Analyze and apply what has been read to specific task
				Functional reading	Follow written instructions
		💡	Critical Thinking	Cognitive activities	Define a problem; identify underlying causes; draw conclusions; devise a solution
		⚛	Technology	Application	Demonstrate the proper procedures for setting up and operating equipment, including computers
				Maintenance/ Troubleshooting	Perform maintenance on equipment, including computers

Tools, Equipment, and Materials List

Backup utility and user's manual (Dantz Retrospect)
Black-and-white photograph to be scanned
Blank CDs
Calculator
CD burner
CD burning software and user's manual
Computer (monitor, CPU, keyboard, mouse)—Most of the job sheets in this book are written for the Macintosh computer. If a Windows-based computer is used, then the job sheets will need to be modified accordingly.
Continuous tone color image
Densitometer
Disk labels
Eight-page document
Electronic clip art
EPP document and instructions (see Job Sheet 9)
EPP magazines and newsletters
File compression utility and user's manual (StuffIt)
Floppy disks
Font-management software and user's manual
Graphics to be scanned
Illustration software and user's manual
Image-editing software and user's manual (Adobe Photoshop)
Imagesetter and film processor
Internet access
Line art to be scanned
Line gauge
OCR software and user's manual
Page-layout software and user's manual (QuarkXPress or Adobe PageMaker)
Paper
Pen and pencil
Preflight software and user's manual
Printer (laser or inkjet)
Processed film (from imagesetter)
Proportional scale
Removable drive (Jaz, Zip, Optical, LS120, SyQuest, tape drive, etc.)
Removable media (Jaz, Zip, Optical, LS120, SyQuest, etc.)
Ruler
Scanner, flatbed
Scanning software and user's manual
Scan target, gray ramp, or imagesetter test sheets
Telecommunications software and user's manual (AOL)
Two blank sheets of 11 x 17 paper
Type gauge
Word-processing software and user's manual

Unit Contents

Teacher Components

Teacher Page

Suggested Activities 1–3
Written Test 1–7
Answers to Written Test 1–13
Learning Activities Sheet 1–15

Transparency Masters

1—Typical Steps in the EPP Process 1–17
2—Typical Steps in a Conventional Phototypesetting Document-Production Cycle 1–19

Student Components

Student Page

Objective Sheet 1–3
Information Sheet 1–5

Student Supplements

1—An Ergonomic Checklist for Computer Workstations 1–13
2—Sources of EPP Information 1–19

Assignment Sheets

1—Survey Internet or Periodicals for Current Articles on EPP Technology 1–21
2—Survey an Electronic Prepress Workstation and Rate It for Ergonomic Suitability 1–23
3—Collect Samples of Simple and Complex EPP Documents 1–25

Suggested Activities

Instructional Plan

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.
- Make transparencies from the transparency masters included in this unit. These appear in the teacher edition only.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.

Suggested Activities

Teaching Suggestions

- Prepare a display of EPP magazines and newsletters.
- Compare electronic prepress operations to desktop publishing procedures. Explain the difference between the two.
- Collect samples of simple and complex EPP documents and show to students. Be sure to include samples that reflect an interesting use of design and layout.
- Have students collect samples of simple and complex EPP documents.
- Review the basic components of a computer workstation with students who have limited experience using computers.
- Take students to tour a print shop that utilizes an imagesetter.
- Take students to tour an electronic prepress operation.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.
- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.
- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. See Answers to Assignment Sheets for correct answers where applicable. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.
- Give and evaluate the posttest.
- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.
- Reteach and retest as required.

Resources Used in Developing This Unit

Print Media

- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete*. Indianapolis: Hayden Books, 1996.

Electronic Media

- *Performance Oriented Ergonomic Checklist for Computer (VDT) Workstations*, 1996. Cornell University Human Factors Group, Dept. Design & Environ. Analysis, <http://ergo.human.cornell.edu/VDTChecklist.html> (May 8, 2000).

Suggested Supplemental Resources

Note: See Student Supplement 2, "Sources of EPP Information" for a list of EPP-related magazines, Internet sites, and associations.

Print Media

- *GRACOL Version 3.0*. This 1999 publication covers all aspects of electronic prepress from planning to binding/finishing.

  Available from:

  Graphic Communications Association (GCA)
  100 Daingerfield Road
  Alexandria, VA 22314-2888
  Tel: 703-519-8160
  www.gca.org
  www.gracol.org

- McAllister, Robin B. *The Complete Series for Desktop Publishing*. Albany, NY: Delmar Publishers, 1997.—This book is designed for people who prepare documents for output to high-end output devices.

  Available from:

  Delmar Publishers Inc.
  3 Columbia Circle, Box 15015
  Albany, NY 12212-5015
  Toll-free: 1-800-865-5840
  E-mail: info@delmar.com
  www.delmar.com

- Stone, Vicki L. *Electronic Prepress Essentials Series*. Sewickley, PA: GATFPress. Item No. 4123—This series of four booklets introduces students to desktop publishing, preflighting, file preparation, typography, and font management.

  Available from:

  Graphic Arts Technical Foundation
  200 Deer Run Road
  Sewickley, PA 1143-2600
  Sales: 1-800-662-3916
  www.gatf.org

Suggested Activities

Electronic Media

- CD-ROM
  - *The Agfa Guide to Digital Color Prepress CD-ROM*

    This CD contains information covering all aspects of prepress and print production. With 24-bit color graphics, 16-bit audio, and QuickTime technology, this CD can be used as a reference tool for users with any level of expertise. (Mac only format) Available from:

    Toll-free: 888-988-AGFA
    www.agfadirect.com

- Videos
  - *Desktop-to-Print Series I and Series II*

    Series I is a set of 6 videotapes divided into 13 modules with an accompanying workbook. This series presents the basics of desktop publishing workflows.

    Series II picks up where Series I left off with a new level of complexity. It includes 7 videotapes with 15 modules, participant workbook, and facilitator's guide. Series II will help stop disk conversion problems before they happen.

    Available from:

    Montage Productions, Inc.
    1085 Tunnel Road #2
    Asheville, NC 28805
    Sales Office: 800-366-3714
    Business Office: 828-299-4103
    Fax: 828-299-1828
    www.montagepro.com

- Internet Resources
  - http://www.loc.gov/copyright/—United States Copyright Office
    This Web site contains the following information related to copyrights: general information on copyright basics, legislation, publications, links, registration, etc.

  - http://teched.vt.edu/gcc/—Graphic Comm Central
    This outstanding Web site contains information about all aspects of the printing and publishing industry. You will find links to the following graphic arts related information: equipment and supply manufacturers; books; curriculum/tutorials; course outlines; and slide presentations.

Written Test

Name ____

Date ____________________________ Score ____________

Objective 1

Match the terms with their definitions.

1. Compact disc
2. Cursor
3. Document
4. Floppy diskette
5. Layout
6. Media
7. Menu bar
8. Pagination
9. RIP

_____ a. Printed or digital information usually combining text (copy) and graphics (artwork and/or photographs)

_____ b. Overall plan or design of a document or page containing text and/or graphics

_____ c. Character or marker displayed on a computer monitor indicating position within a working document where characters will appear when keys are pressed

_____ d. 3 $\frac{1}{2}''$ removable mylar magnetic media encased in a thin plastic sleeve used by the computer to store and retrieve information

_____ e. Plastic disc containing a continuous spiral track on which information is encoded to be read by a low-powered laser beam and photo diode detector

_____ f. Process of dividing a document into pages for printing and/or adding page numbers to each page

_____ g. Common computer-technology term referring to the many types of materials used in data storage and retrieval

_____ h. List of software-program options usually appearing near the top portion of a monitor screen after a program is opened

_____ i. Hardware and/or software that translates object-oriented graphics and fonts into printable dots

Objective 2

Define electronic prepress— ____

____

____

Written Test

Objective 3

Match basic elements of an EPP system with their definitions.

1. EPP operator/team
2. Hardware
3. Software

_____ a. Equipment or physical parts of an EPP system including input and output devices necessary to complete the task

_____ b. Application programs that allow the computer operator to operate the EPP hardware efficiently

_____ c. Individual or group responsible for operating the hardware and software used in the preparation of a digital document

Objective 4

Arrange in order the typical steps in the EPP process by placing a "1" next to the first step, a "2" next to the second step, and so on.

_____ a. Print the document on a laser printer for proofing.

_____ b. RIP the document and send to imagesetter for film output.

_____ c. Create text and graphics to be used in the project.

_____ d. Make corrections in page-layout program.

_____ e. If blueline is approved, plates are created for job to be sent to the press.

_____ f. Make a blueline or color proof for final proofing and authorization.

_____ g. Design and lay out document using page-layout software.

_____ h. Run preflight check program to check for potential printing problems.

Objective 5

List two benefits of EPP.

a. ______________________________

b. ______________________________

Objective 6

Match typical EPP job classifications with their functions.

1. Computer illustrator
2. Designer
3. Digital image specialist
4. Editor/proofreader
5. EPP coordinator
6. EPP operator
7. System coordinator

_____ a. Scans, manipulates, and color corrects continuous tone images and graphics

_____ b. Oversees and manages the EPP process

_____ c. Designs and creates digital graphics

_____ d. Prepares electronic documents to be printed to high resolution output devices

_____ e. Checks printed copy for errors, content, and necessary revisions

_____ f. Plans and designs the layout

_____ g. Maintains the hardware and software used in the EPP process

Objective 7

List four characteristics of a professional EPP operator.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

Objective 8

List four of the factors to consider before purchasing an EPP system.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

Objective 9

Select from the following list characteristics of a quality EPP work environment by placing an "X" in the appropriate blanks.

_____ a. Provides monitor that allows for proper adjustment of contrast and brightness

_____ b. Provides very warm temperatures and high humidity

____ c. Provides comfortable, adjustable chairs that adequately support operator's lower back and encourage good posture

____ d. Provides a casual working environment

____ e. Provides work surfaces that are not adjustable

____ f. Provides a well-designed mouse, trackball, and wrist rest which are comfortable and easy to use

____ g. Provides a document holder for data-entry tasks

Objective 10

Select from the following list factors used to determine if a document is suitable for EPP by placing an "X" in the appropriate blanks.

____ a. Size of hard drive utilized

____ b. Frequency of publication

____ c. Type of page-layout software utilized

____ d. Number and type of graphics required

____ e. Design capabilities required

Objective 11

Select from the following list simple EPP documents by placing an "X" in the appropriate blanks.

____ a. Resumés

____ b. Flyers

____ c. Proposals

____ d. Technical reports

____ e. Advertisements

____ f. Magazines

____ g. Books/booklets

____ h. Certificates

____ i. Transparency masters

____ j. Forms

Objective 12

Select from the following list complex EPP documents by placing an "X" in the appropriate blanks.

____ a. Annual or quarterly reports

____ b. Brochures

____ c. Proposals

____ d. Newsletters

____ e. Catalogs

____ f. Letterhead

____ g. Magazines

____ h. Books/booklets

____ i. Certificates

____ j. Flowcharts

Objective 13

List five sources of EPP information.

a.

b.

c.

d.

e.

Objective 14

Discuss copyright law applying to EPP.

Objective 15

List the three elements in an official U.S. copyright notice.

a.

b.

c.

***Permission to duplicate this test is granted.**

Answers to Written Test

Objective 1

a. 3
b. 5
c. 2
d. 4
e. 1
f. 8
g. 6
h. 7
i. 9

Objective 2

Digital process dedicated to the preparation of materials for output to imagesetters, large-format printers, platesetters, or other PostScript-type devices at a print shop

Objective 3

a. 2
b. 3
c. 1

Objective 4

a. 3
b. 6
c. 1
d. 4
e. 8
f. 7
g. 2
h. 5

Objective 5

Any two of the following:

a. Combines the tasks of many individuals into one operation
b. Provides more control over final editing, design, and layout
c. Increases capabilities, reduces costs, and cuts turn-around times

Objective 6

a. 3
b. 5
c. 1
d. 6
e. 4
f. 2
g. 7

Objective 7

Any four of the following:

a. Good organizational skills
b. Able to meet deadlines and handle stress
c. Able to take initiative and work independently
d. Has good writing skills
e. Understands written and verbal instructions
f. Is patient, flexible, and open to change
g. Has good problem-solving skills and is able to make decisions
h. Has excellent computer skills
i. Stays up-to-date with emerging technologies in EPP field
j. Is an accurate keyboard operator and a good proofreader
k. Is able to work effectively in teams

Answers to Written Test

l. Handles others' materials with respect and maintains confidences when necessary
m. Knows copyright law

Objective 8

Any four of the following:

a. Types of publications commonly produced
b. Number of available staff
c. Amount of training time available
d. Equipment and software currently available
e. Cost-effectiveness in relation to use, available staff, and currently available equipment and software

Objective 9

a, c, f, g

Objective 10

b, d, e

Objective 11

a, b, e, h, i

Objective 12

a, b, c, d, e, g, h

Objective 13

Any five of the following:

a. Computer and printer dealers
b. Software companies
c. Hardware manufacturers
d. Computer and EPP magazines, newsletters, books, and Internet sites
e. University or technical-college personnel
f. Vocational-education instructors
g. EPP associations
h. User groups
i. People and businesses that use EPP systems

Objective 14

Discussion should include the following in student's own words:

a. Using copyrighted material without acknowledging and contacting the author or publisher for permission is illegal; violation of copyright law carries strict penalties.
b. Duplicating copyrighted software is illegal.

Objective 15

a. The symbol ©, the word "Copyright," or the abbreviation "Copr."
b. The year of first publication
c. The name of the copyright owner

Prerequisites:
None

Learning Activities Sheet

Student Name ______________________________

Place a checkmark in the appropriate box as you complete each of the steps below.

	☐	1.	**Take**	Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.
	☐	2.	**Read**	Objective Sheet.
	☐	3.	**Study**	Information Sheet, Objectives 1 through 4.
	☐	4.	**Do**	Assignment Sheet 1, "Survey Internet or Periodicals for Current Articles on EPP Technology."
	☐	5.	**Stop**	Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 6. If the evaluation is not satisfactory, repeat step 4.
	☐	6.	**Research**	Online resources regarding the electronic prepress process. Review the prepress process technology report at www.prepress.pps.com as one of your sources.
	☐	7.	**Study**	Information Sheet, Objectives 5 through 8.
Optional	☐	8.	**Interview**	Three electronic prepress operators to learn about possible career opportunities.
	☐	9.	**Study**	Information Sheet, Objective 9 and Student Supplement 1, "An Ergonomic Checklist for Computer Workstations."
	☐	10.	**Do**	Assignment Sheet 2, "Survey an Electronic Prepress Workstation and Rate It for Ergonomic Suitability."
	☐	11.	**Stop**	Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 12. If the evaluation is not satisfactory, repeat steps 9 and 10.

Learning Activities Sheet

☐ 12. **Study** Information Sheet, Objectives 10 through 12.

☐ 13. **Do** Assignment Sheet 3, "Collect Samples of Simple and Complex EPP Documents."

☐ 14. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 15. If the evaluation is not satisfactory, repeat steps 12 and 13.

☐ 15. **Study** Information Sheet, Objective 13 and Student Supplement 2, "Sources of EPP Information."

☐ 16. **Locate** The electronic prepress resources in your facility. Note any additional sources.

☐ 17. **Study** Information Sheet, Objectives 14 and 15.

☐ 18. **Research** Online resources regarding copyright law. Visit http://lcweb.loc.gov/copyright/ as one of your sources.

☐ 19. **Check** With instructor for any additional assignments to be completed.

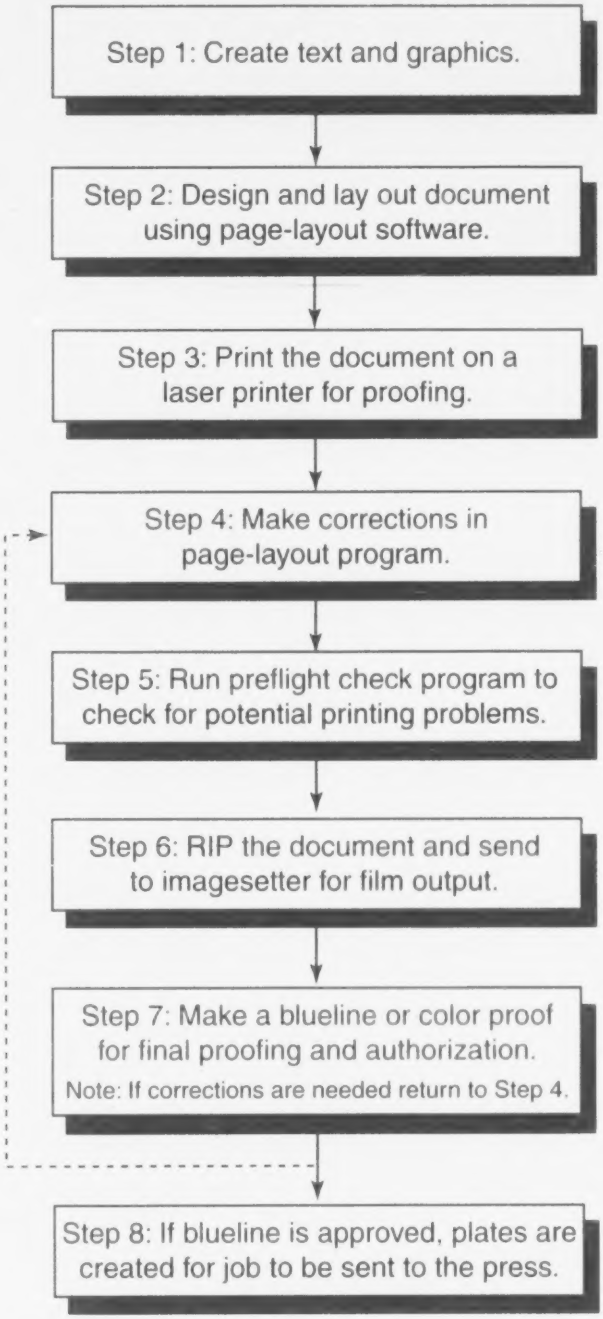
☐ 20. **Do** Additional assignments listed below.

☐ 21. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 22. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

***Permission to duplicate this form is granted.**

Typical Steps in the EPP Process



Step 1: Create text and graphics.

Step 2: Design and lay out document using page-layout software.

Step 3: Print the document on a laser printer for proofing.

Step 4: Make corrections in page-layout program.

Step 5: Run preflight check program to check for potential printing problems.

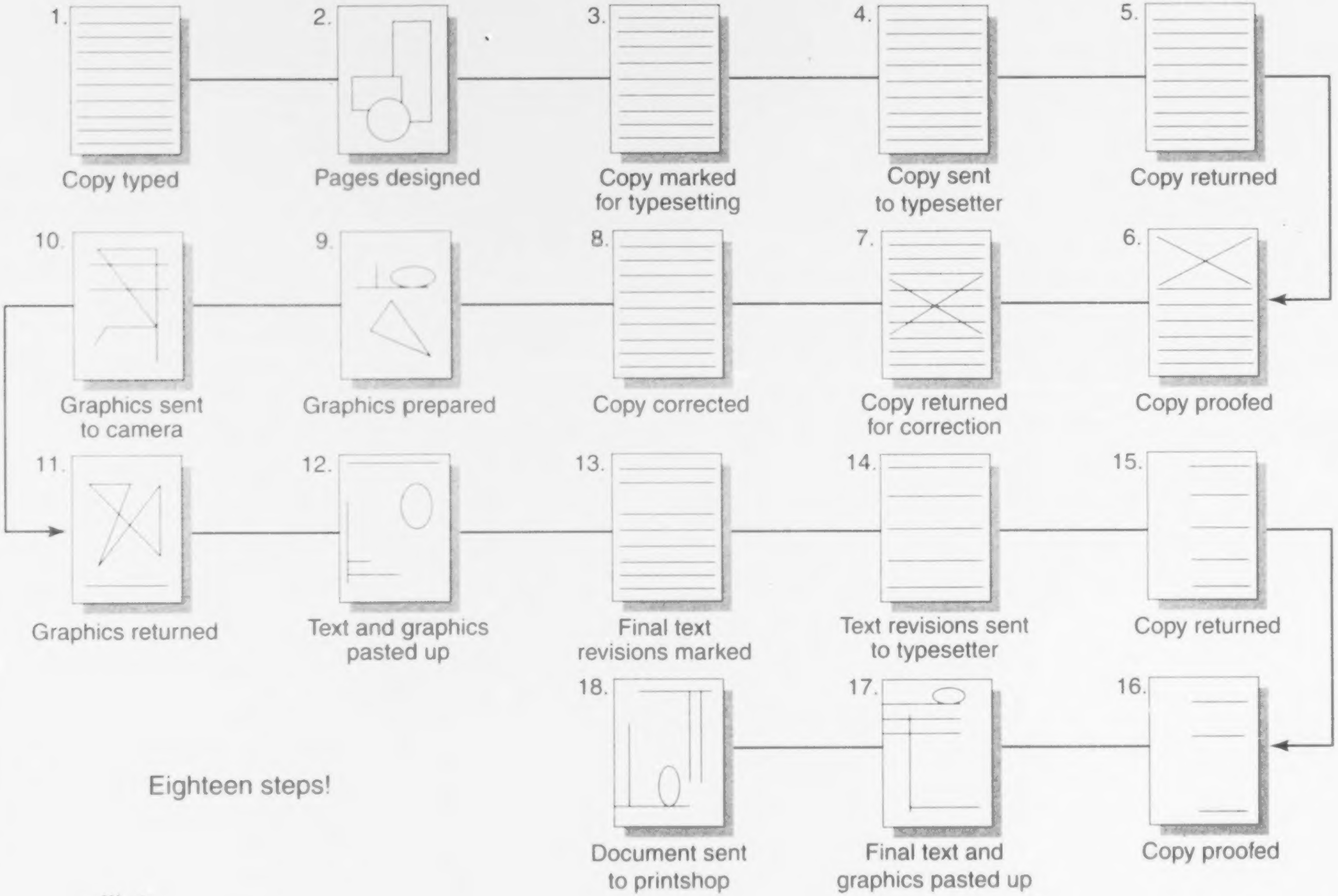
Step 6: RIP the document and send to imagesetter for film output.

Step 7: Make a blueline or color proof for final proofing and authorization.

Note: If corrections are needed return to Step 4.

Step 8: If blueline is approved, plates are created for job to be sent to the press.

Typical Steps in a Conventional Phototypesetting Document-Production Cycle


1. Copy typed
2. Pages designed
3. Copy marked for typesetting
4. Copy sent to typesetter
5. Copy returned
6. Copy proofed
7. Copy returned for correction
8. Copy corrected
9. Graphics prepared
10. Graphics sent to camera
11. Graphics returned
12. Text and graphics pasted up
13. Final text revisions marked
14. Text revisions sent to typesetter
15. Copy returned
16. Copy proofed
17. Final text and graphics pasted up
18. Document sent to printshop

Eighteen steps!

Unit Contents

Teacher Components

Teacher Page

Suggested Activities 2–3
Written Test 2–7
Answers to Written Test 2–13
Learning Activities Sheet 2–15

Transparency Masters

1—Major Types of EPP Hardware 2–17
2—Local Area Network (LAN) 2–19

Student Components

Student Page

Objective Sheet 2–3
Information Sheet 2–5

Student Supplements

1—Operating a Mouse 2–17
2—Common Macintosh System Troubleshooting Procedures 2–19

Assignment Sheets

1—Examine Computer Operating Manual(s) for Basic Operating Procedures 2–21
2—Complete an EPP System-Specifications List 2–23
3—Determine System Requirements for a Page-Layout Software Package 2–25
4—Determine Basic Costs of EPP Systems 2–27

Job Sheets

1—Start/Boot the Computer 2–29
2—Format a Disk 2–31
3—Back Up a Disk or Other Removable Media 2–33

Suggested Activities

Instructional Plan

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.
- Make transparencies from the transparency masters included in this unit. These appear in the teacher edition only.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.
- Discuss and demonstrate the job sheets. Make sure all required tools, equipment, and materials are available. Review with students the criteria for evaluation of these activities and the rating scale that will be used to indicate job performance.

Suggested Activities

Teaching Suggestions

- For additional information on digital printing, refer to the following MAVCC curriculum: *Graphic Arts: Process Camera, Stripping, and Platemaking*—Unit 8, "Digital Impact on Prepress Activities"; *Graphic Arts: Orientation, Composition, and Paste-Up*—Unit 5, "Printing Processes," Objective 6.
- Prepare a display of computer hardware catalogs, EPP magazines, and EPP newsletters.
- Using a workstation within the classroom lab, review the hardware components of an electronic prepress system.
- Have students who do not know how to start a computer or format a disk complete Job Sheets 1 and 2. These job sheets are optional for students who are familiar with these procedures.
- Have students who are unfamiliar with how to use a mouse review Student Supplement 1, "Operating a Mouse." This supplement is optional for students who already possess these skills.
- Take students to tour a service bureau allowing them the opportunity to obtain knowledge concerning high-end workstations, input/output equipment, and proofing devices utilized in these businesses.
- Arrange for students to visit to an EPP equipment vendor to discuss cost of hardware and software required for the EPP operation. This will help students complete Assignment Sheet 4.
- Have students research new hardware technologies just being introduced and compare these to current systems.
- Have students evaluate and detail an electronic prepress system in your classroom lab and make suggestions on upgrades needed to optimize prepress operations.
- Provide students with a file to backup for use with Job Sheet 3.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.
- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.
- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.

- Evaluate the job sheets. When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in the student edition. Then observe the student performing the procedure.

  Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily completed the process step(s) for each checkpoint area. If the student is unable to complete the procedure correctly, have the student review the materials and try again.

  Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria that are provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

  Two sample performance evaluation keys have been provided below. Many other keys are available. Select one rating (grading scale) that best fits your program needs.

  Sample A

  4—**Skilled**—Can perform job with no additional training.
  3—**Moderately skilled**—Has performed job during training program; limited additional training may be required.
  2—**Limited skill**—Has performed job during training program; additional training is required to develop skill.
  1—**Unskilled**—Is familiar with process, but is unable to perform job.
  0—**No exposure**—No information or practice provided during training program.

  Sample B

  Yes—Can perform job with no additional training.
  No—Is unable to perform job satisfactorily.

- Give and evaluate the posttest.
- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.
- Reteach and retest as required.

Resources Used in Developing This Unit

Print Media

- *The Official Adobe Print Publishing Guide*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1998.
- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete*. Indianapolis: Hayden Books, 1996.
- Williams, Robin, and Steve Cummings. *Jargon*. Berkeley, CA: Peachpit Press, 1993.

Suggested Activities

Suggested Supplemental Resources

Print Media

- Aker, Sharon Zardetto. *The Macintosh Bible, 7th Edition*. Berkeley, CA: Peachpit Press, 1998. ISBN: 0201874830—This book provides expert troubleshooting advice, Internet essentials, tips on buying the right Macintosh computer for your needs, as well as hardware and software reviews.

- Landau, Ted. *Sad Macs, Bombs, and Other Disasters*, 3d ed. Berkeley, CA: Peachpit Press, 1997.—The book is the complete guide to troubleshooting the Mac, and has an entry for every imaginable disaster that might befall your Mac from bootup to shutdown.

  The books listed above are available from:

  Peachpit Press
  2414 Sixth Street
  Berkeley, CA 94710
  Toll-free: 1-800-283-9444
  www.peachpit.com

- Ajayi, A'isha, and Pamela Groff. *Understanding Electronic Communications: Printing in the Information Age*. Sewickley, PA: GATFPress, 1997. Item No. 1423—This book serves as an introductory-level guide to file transmission methods, networking technologies, and using information systems within a printing company.

  Available from:

  Graphic Arts Technical Foundation
  200 Deer Run Road
  Sewickley, PA 1143-2600
  Sales: 1-800-662-3916
  www.gatf.org

Electronic Media

- www.ugeek.com/glossary—Online dictionary containing technical computer terms

- http://computeruser.com—*Computer User* is a huge computer magazine with news, articles, educational columns, reviews and previews, opinions, and even an easily searchable dictionary.

Written Test

Name ______________________________

Date ______________________ Score __________

Objective 1

Match the terms with their definitions. Definitions continue on the next page.

1. Byte
2. Central processing unit
3. Compact disc drive
4. Compatible
5. DPI
6. Floppy disk drive
7. G3 and G4
8. GUI
9. Hard drive
10. Icon
11. Input device
12. LPI
13. Memory
14. Multitasking
15. Networking capability
16. Operating system
17. Pentium
18. Pointer
19. RAM
20. Raster image processor
21. Removable drive
22. Resolution
23. Storage device
24. Windows-like environment

_____ a. Temporary memory that stores data and programs while computer is in use

_____ b. Used to read from and write information to floppy diskettes

_____ c. Equipment used to enter information into a computer

_____ d. The density of dots or pixels on a page or monitor usually measured in dots per inch (dpi)

_____ e. Portion of computer that stores information and software while the machine is on

_____ f. Combination of computer hardware and software between the EPP operator's computer and the imagesetter that translates the PostScript file into a raster, which the output device can print

_____ g. Performs arithmetic and logical operations and decodes and executes instructions

_____ h. Measurement of the screen frequency or resolution of a halftone image ranging from 65 lpi to 200 lpi

_____ i. Intel Corporation's popular microprocessor chip which replaced the firm's 80486 chip in multitasking computers

_____ j. Unit of measure related to how much information a computer can manipulate and store

____ k. Measurement of the resolution at which an output device, such as an imagesetter or printer, displays text and graphics

____ l. Equipment used to store and retrieve information on a computer

____ m. Symbol representing a particular operation

____ n. Refers to using graphics or icons along with a keyboard and a mouse, to provide an easy-to-use interface for some computer operations

____ o. Storage device that uses some type of disk or cartridge for storing and transporting large files such as documents containing graphics

____ p. A mechanism designed to turn a CD in the presence of a laser beam and photo diode detector to read information encoded on the CD

____ q. Icon indicating mouse position

____ r. Computer program responsible for housekeeping and establishing communications between disk storage device, computer, and printer; tells computer how to manipulate information

____ s. Graphic display that allows quick movement from one application to another without exiting the application

____ t. Using more than one application simultaneously

____ u. Device used to read, write, and store data on a hard, magnetic disk located inside the computer

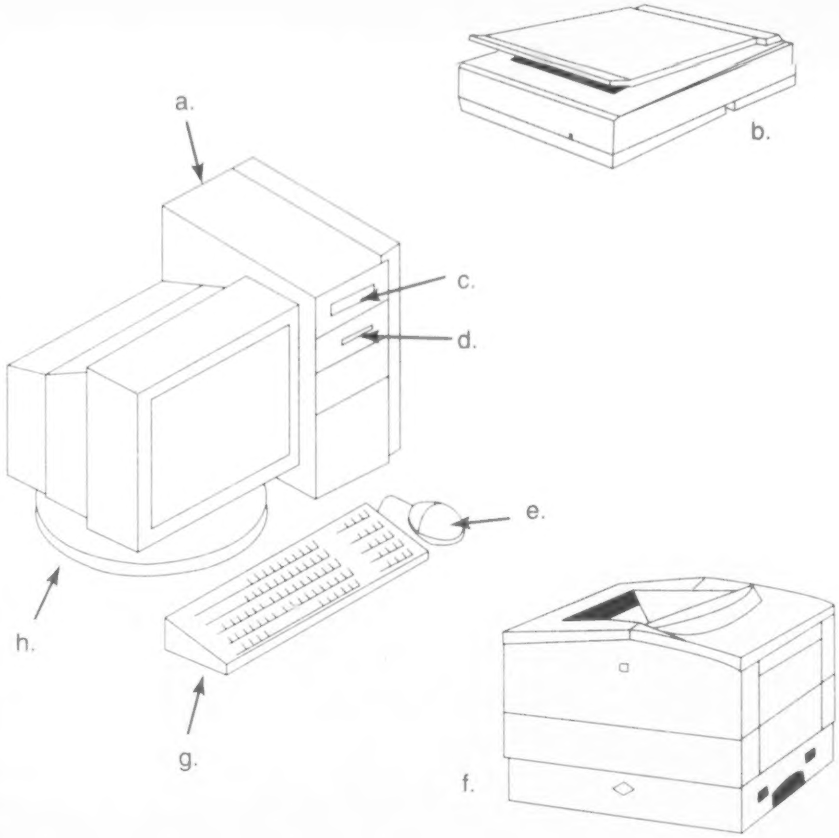
____ v. Ability to connect several workstations into one system that shares equipment and software

____ w. Computer with an operating system and software that simulate another computer manufacturer's products

____ x. Apple's newest series of Power Mac computers with processing speeds up to 450 MHz

Objective 2

Identify the major types of EPP hardware.



a. ____________________ e. ____________________

b. ____________________ f. ____________________

c. ____________________ g. ____________________

d. ____________________ h. ____________________

Objective 3

List three types of computer systems used in EPP.

a. ____

b. ____

c. ____

Written Test

Objective 4

Match common operating systems used in EPP with their descriptions.

1. Macintosh Operating System
2. MS-DOS
3. UNIX

_____ a. Operating system designed for Apple's numerous personal computer models

_____ b. System designed to be used with AT&T computers; application features include text-manipulation and cut-and-paste capabilities as well as multiuser, multitasking, multiplatform, and networking capabilities

_____ c. System designed to be used with the original IBM personal computer but has come to be used with all IBM compatibles

Objective 5

Describe the types of monitors used in EPP systems.

a. Color— ____

____

b. Full-page— ____

____

c. Two-page— ____

____

Objective 6

Match types of input devices used in EPP systems with their uses.

1. Digital camera
2. Keyboard
3. Mouse
4. Pressure-sensitive tablet
5. Scanner

_____ a. Used to convert line art, photos, or text to digital data usable by the computer

_____ b. Used to enter information into the computer through the use of keys containing the alphabet, numbers, symbols, and functions

_____ c. Used to record video or still images in a digital form rather than on a film negative

_____ d. Used to control the on-screen cursor or pointer when selecting items in pull-down menus, moving data, or drawing graphics in application software

_____ e. Used to draw and mimic brush strokes and airbrush techniques

Objective 7

Complete statements concerning characteristics of types of storage devices used in EPP systems by circling the correct answers.

a. A computer's operating system, software applications, and utilities are normally stored on a (**Zip disk, hard disk**).

b. Jaz disks can store up to (**2GB, 100 MB**) of information.

c. Compact discs are considered a (**fast, slow**) method of accessing information.

d. (**Optical disks, CDs**) are widely used as a portable means of transporting information.

e. (**SyQuest, SuperDisk**) is a new form of storage device that is not standard yet.

f. A SyQuest cartridge can store up to (**650MB, 200MB**) of information.

Objective 8

Match types of output devices used in EPP systems with their descriptions.

1. Direct-digital press
2. Dye sublimation printer
3. Imagesetter
4. Inkjet printer
5. Laser printer
6. Platesetter
7. Thermal-wax transfer printer
8. Wide-body inkjet printer

_____ a. Pigments are heated by the print head and penetrate the paper's special coating, blending to correct amount of each primary color (CMYK) to create the right color for each printed dot providing a photo-quality hard copy.

_____ b. Supplies a resolution of 300 dpi or greater; uses intense light and toner to transfer (or draw) images on paper

_____ c. Laser color printer for on-demand or short-run oversized documents; used to print posters and displays

_____ d. Supplies near-laser-quality resolutions; forms characters and graphics by spraying ink on paper

_____ e. Rolls of plastic film coated with four different colors of wax-based pigments are melted and transferred to the paper. Each color is applied in a separate pass, requiring the page to go through the printer several times.

_____ f EPP system sends digital files directly to the printing press.

_____ g. Generates high-resolution (1200–3000 dpi) film separations from EPP document files

_____ h. EPP files are sent to and imaged directly onto aluminum or polyester plates using laser diodes. These are then loaded on the printing press.

Written Test

Objective 9

List four of the common features of low-end and high-end output devices used in EPP systems.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

Objective 10

Discuss PostScript and its importance to printing.

____

____

____

Objective 11

Select true statements concerning networking by placing an "X" in the appropriate blanks.

_____ a. The purpose of a network is to connect two or more computers allowing documents and resources to be shared.

_____ b. LocalTalk networks run at 10 times the speed of Ethernet.

_____ c. Ethernet comes built in on most Macintosh computers.

_____ d. Ethernet hubs help ensure that data does not get lost or corrupted.

_____ e. Ethernet connects computers using ordinary telephone cord.

_____ f. A server allows for file storage and document sharing on a common hard drive.

_____ g. LocalTalk is the simplest and cheapest kind of network.

_____ h. Computer-to-computer networking allows users to copy files from one computer to another much faster and easier than hand carrying those files.

*Permission to duplicate this test is granted.

Answers to Written Test

Objective 1

a.	19	g.	2	m.	10	s.	24
b.	6	h.	12	n.	8	t.	14
c.	11	i.	17	o.	21	u.	9
d.	22	j.	1	p.	3	v.	15
e.	13	k.	5	q.	18	w.	4
f.	20	l.	23	r.	16	x.	7

Objective 2

a. Central processing unit (CPU)
b. Flatbed scanner
c. CD-ROM drive
d. Floppy drive
e. Mouse
f. Laser printer
g. Keyboard
h. Monitor

Objective 3

a. Apple Macintosh
b. Windows-based platform
c. UNIX workstation

Objective 4

a. 1
b. 3
c. 2

Objective 5

a. Color—Displays multi-colors
b. Full-page—Displays one full-size 8 1/2″ x 11″ page
c. Two-page—Displays two 8 1/2″ x 11″ pages simultaneously

Objective 6

a. 5
b. 2
c. 1
d. 3
e. 4

Objective 7

a. Hard disk
b. 2GB
c. Slow
d. CDs
e. SuperDisk
f. 200MB

Objective 8

a.	2	e.	7
b.	5	f.	1
c.	8	g.	3
d.	4	h.	6

Answers to Written Test

Objective 9

Any four of the following:
a. Resolution
b. RAM memory
c. PostScript
d. Resident fonts
e. Screen fonts

Objective 10

Discussion should include the following in student's own words:

PostScript is a powerful page-description language created by Adobe Systems for high quality and high resolution output. It is a mathematical language based on vector art which means the printer receives information as mathematical equations.

PostScript is important to printing because it tells a printer how to create complex letter forms and graphics. Almost all electronic prepress computers use the PostScript language to output files to printers.

Objective 11

a, c, d, f, g, h

Prerequisites:
None

Learning Activities Sheet

Student Name ______________________________

Place a checkmark in the appropriate box as you complete each of the steps below.

☐ 1. **Take** Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 2. **Read** Objective Sheet.

☐ 3. **Study** Information Sheet, Objectives 1 through 6.

☐ 4. **Do** Assignment Sheet 1, "Examine Computer Operating Manual(s) for Basic Operating Procedures."

☐ 5. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 6. If the evaluation is not satisfactory, repeat step 4.

Optional ☐ 6. **Study** Student Supplement 1, "Operating a Mouse." This is optional for students who already possess these skills.

☐ 7. **Observe** Demonstration of procedures to be used in completing Job Sheets 1 through 3.

Optional ☐ 8. **Do** Job Sheet 1, "Start/Boot the Computer," Job Sheet 2, "Format a Disk," and Job Sheet 3, "Back Up a Disk or Other Removable Media."

Note: These job sheets are optional only for students who already know how to perform these procedures.

☐ 9. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 1, 2, and 3, continue to step 10.

☐ 10. **Study** Information Sheet, Objectives 7 through 11.

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Learning Activities Sheet

☐ 11. **Do** Assignment Sheet 2, "Complete an EPP System-Specifications List" and Assignment Sheet 3, "Determine System Requirements for a Specific Software Package."

☐ 12. **Stop** After completing each assignment sheet, have your instructor evaluate the completed assignment sheet. If the evaluation is satisfactory, continue to the next assignment sheet. After satisfactorily completing Assignment Sheets 2 and 3, continue to step 13.

☐ 13. **Do** Assignment Sheet 4, "Determine Basic Costs of EPP Systems."

☐ 14. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 15. If the evaluation is not satisfactory, repeat step 13.

☐ 15. **Check** With instructor for any additional assignments to be completed.

☐ 16. **Do** Additional assignments listed below.

____

____

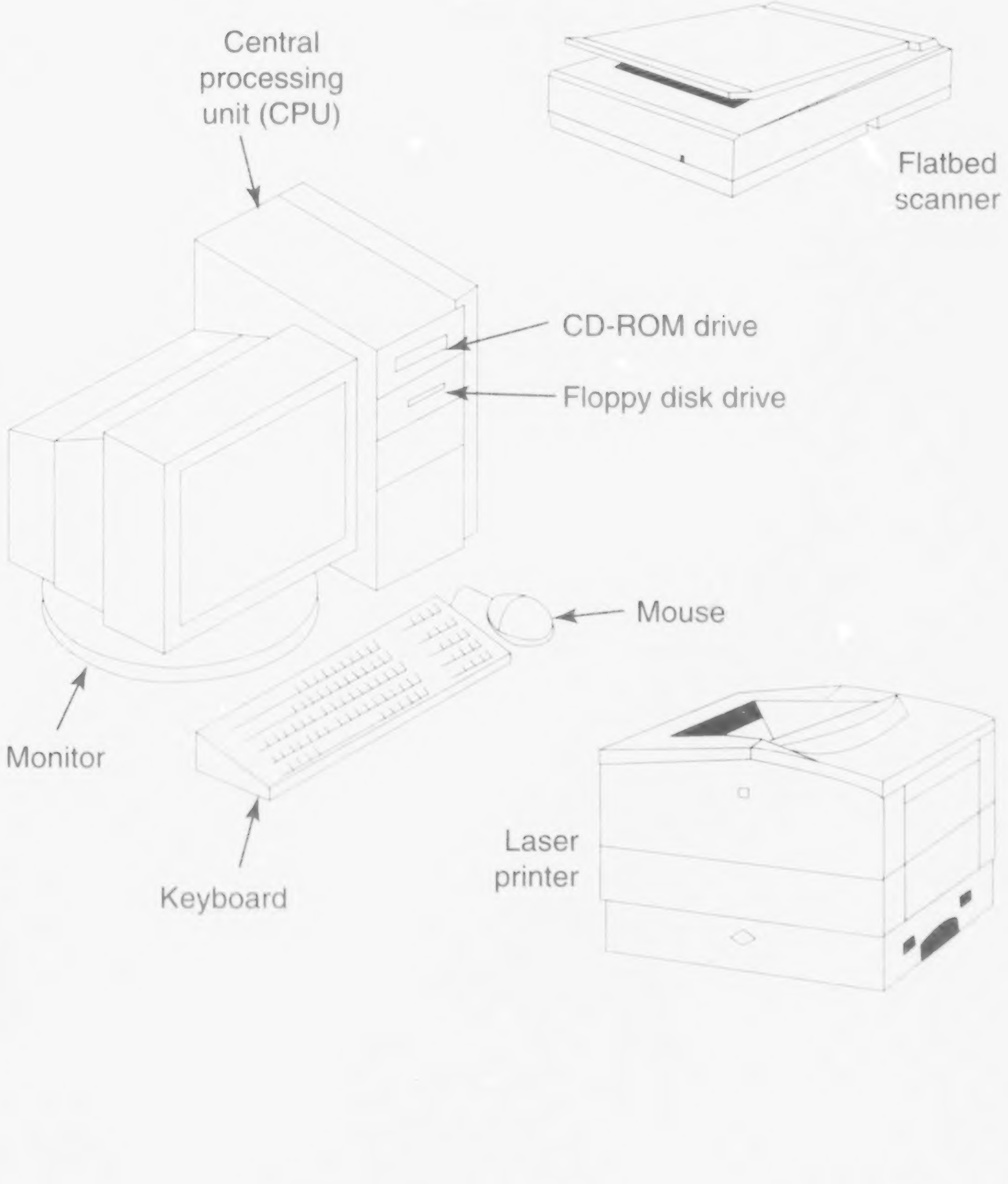
____

☐ 17. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 18. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

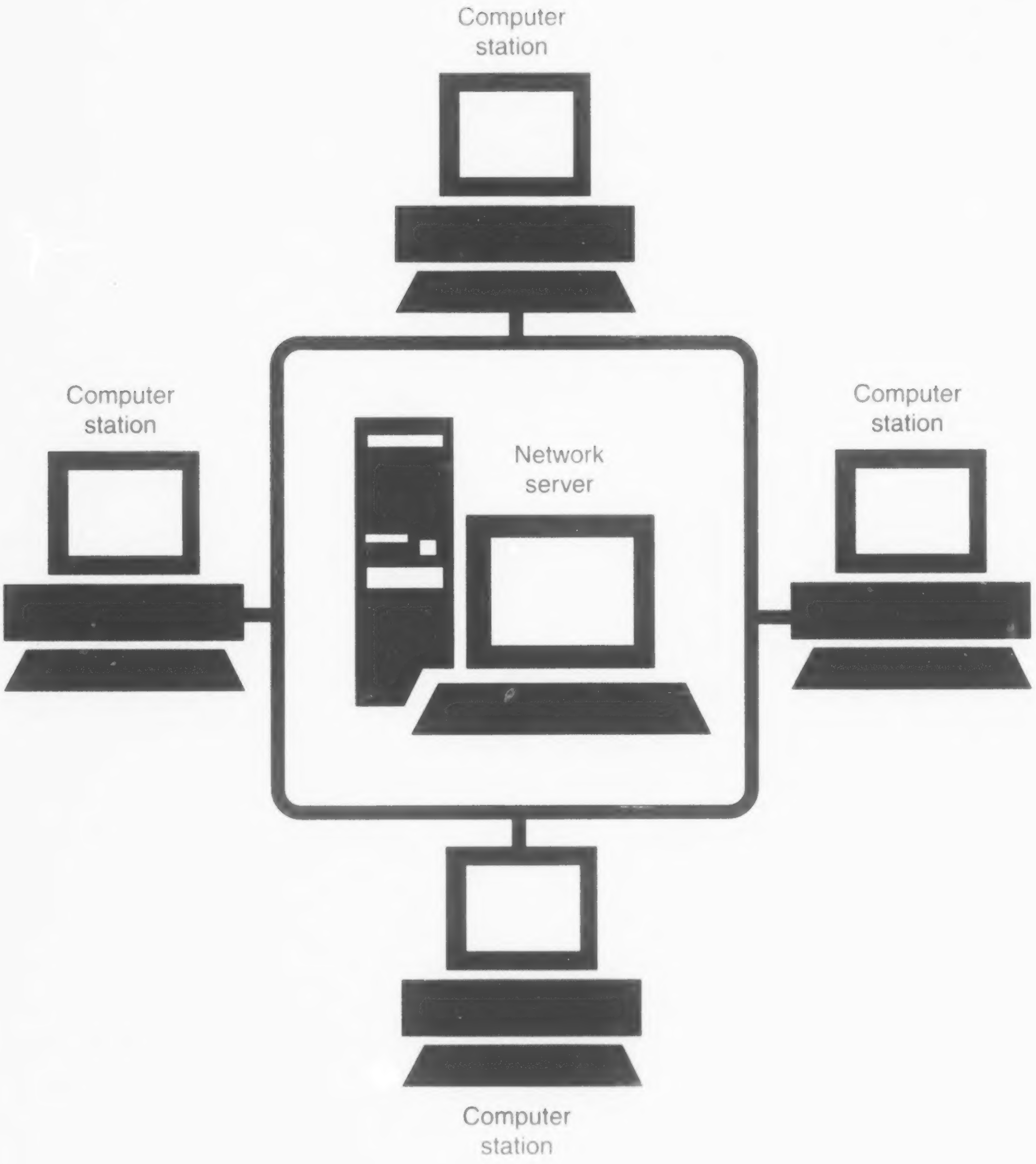
***Permission to duplicate this form is granted.**

Major Types of EPP Hardware


Central processing unit (CPU)
Flatbed scanner
CD-ROM drive
Floppy disk drive
Mouse
Monitor
Keyboard
Laser printer

TM 1

Local Area Network (LAN)


Computer station
Computer station
Network server
Computer station
Computer station

TM 2

Unit 3 Software

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2—Examine Page-Layout Software Manual for Basic Operations 3–29

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1—Create Word-Processed Document 3–33
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Suggested Activities

Instructional Plan

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.
- Make transparencies from the transparency masters included in this unit. These appear in the teacher edition only.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.

Suggested Activities

- Discuss and demonstrate the job sheets. Make sure all required tools, equipment, and materials are available. Review with students the criteria for evaluation of these activities and the rating scale that will be used to indicate job performance.

Teaching Suggestions

- Download or order software demos from Adobe, Macromedia, and Quark. See "Suggested Supplemental Resources" section for more information.
- Prepare a display of trade journals evaluating and comparing features of various page-layout, illustration, and image-editing software.
- Demonstrate to students the page-layout software utilized in the classroom.
- Demonstrate to students the illustration software utilized in the classroom.
- Demonstrate to students the image-editing software utilized in the classroom.
- Have students review the user's manuals for all software utilized in the classroom.
- When students are studying objectives 9 through 13, have them view the various page-layout specification features described in the objectives on their computer screens using the page-layout software available on-site.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.
- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.
- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. See Answers to Assignment Sheets for correct answers where applicable. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.
- Evaluate the job sheets. When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in the student edition. Then observe the student performing the procedure.

Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily completed the process step(s) for each checkpoint area. If the student is unable to complete the procedure correctly, have the student review the materials and try again.

Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria that are provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

Two sample performance evaluation keys have been provided below. Many other keys are available. Select one rating (grading scale) that best fits your program needs.

Sample A

4—**Skilled**—Can perform job with no additional training.
3—**Moderately skilled**—Has performed job during training program; limited additional training may be required.
2—**Limited skill**—Has performed job during training program; additional training is required to develop skill.
1—**Unskilled**—Is familiar with process, but is unable to perform job.
0—**No exposure**—No information or practice provided during training program.

Sample B

Yes—Can perform job with no additional training.
No—Is unable to perform job satisfactorily.

- Give and evaluate the posttest.
- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.
- Reteach and retest as required.

Resources Used in Developing This Unit

Print Media

- *Adobe PageMaker 6.5 Classroom in a Book.* Indianapolis: Adobe Press/Macmillan Computer Publishing, 1997.
- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete.* Indianapolis: Hayden Books, 1996.
- Parker, Roger C. *Looking Good in Print*, 4th ed. Scottsdale, AZ: The Coriolis Group, 1998.
- Wallace, Rick. *The Interactive Guide to QuarkXPress 4.* Indianapolis, IN: Macmillan Computer Publishing, 1998
- Williams, Robin, and Steve Cummings. *Jargon.* Berkeley, CA: Peachpit Press, 1993.

Suggested Supplemental Resources

Print Media

Adobe's Classroom in a Book series offers complete self-paced training based on real-world projects. Practical, focused lessons are designed to fit into busy schedules and help students learn the features of Adobe software quickly and easily. Books include intermediate and advanced techniques for both Windows and Macintosh.

For information about the following Adobe Classroom in a Book training manuals, go to www.adobe.com.

- *Adobe Illustrator 8.0 Classroom in a Book*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1997.
- *Adobe InDesign Classroom in a Book*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1999.
- *Adobe Photoshop 5.5 Classroom in a Book*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1999.

For information concerning the following books, contact:

Peachpit Press
2414 Sixth Street
Berkeley, CA 94710
Toll-free: 800-283-9444
www.peachpit.com

- Alspach, Ted. *PageMaker 6.5 Plus: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1997.
- Blatner, David, and Eric Taub. *The QuarkXPress Book*, 4th ed. Berkeley, CA: Peachpit Press, 1998.
- Cohen, Sandee. *The FreeHand 8: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1998.
- Cohen, Sandee. *InDesign for Macintosh and Windows: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1999.
- Dayton, Linnea, and Jack Davis. *The Photoshop 5.0/5.5 Wow! Book*. Berkeley, CA: Peachpit Press, 1999.
- *Macromedia FreeHand 8 Authorized*. Berkeley, CA: Macromedia Press/Peachpit Press, 1998.
- Steuer, Sharon. *The Illustrator 8 Wow! Book*. Berkeley, CA: Peachpit Press, 1998.

- Weinmann, Elaine. *QuarkXPress 4: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1998.
- Weinmann, Elaine, and Peter Lourekas. *Illustrator 8 for Windows and Macintosh: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1999.
- Weinmann, Elaine, and Peter Lourekas. *Photoshop 5.5 for Windows and Macintosh: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1999.
- Software Downloads

  — Adobe Systems Incorporated
  345 Park Avenue
  San Jose, CA 95110-2704
  Tel: 408-536-6000
  To download free demos of Adobe software go to www.adobe.com
  To request a demo CD by mail, call 1-800-685-3587.

  — Macromedia, Inc.
  600 Townsend Street
  San Francisco, CA 94103
  Tel: 415-252-2000
  To download free demos of Macromedia software go to www.macromedia.com

  — Quark, Inc.
  1800 Grant Street
  Denver, CO 80203
  Tel: 303-894-8888
  To download free demos go to www.quark.com
  To request a demo CD by mail, call 1-800-676-4575.

- CD-ROMS/Videos

  — MacAcademy offers training on the latest electronic prepress software in either video cassette or CD-ROM formats for Macintosh and Windows users. For a complete list of the titles available, contact:

  MacAcademy/Windows Academy
  100 East Granada Boulevard
  Ormond Beach, FL 32176
  Toll-free: 1-800-527-1914
  www.mac.academy.com

Suggested Activities

  - Digital Media, Inc. provides EPP professionals with interactive training materials on CD-ROM. DMI also provides videotapes, online testing, and printed materials as additional training tools. For more information, contact:

    Digital Media, Inc.
    3902-B Old State Rd. 37 South
    Bloomington, IN 47401
    Toll-free: 1-800-355-6429
    www.digitalmedia.com

  - The Virtual Training Company produces CDs that walk students through everything from the basics to advanced use of an application, using on-screen narrated QuickTime screen movies. In addition, all training CDs will play on both Macs and PCs. They have introduced the VTC Online University, where you can play their tutorial movies right over your Internet connection using QuickTime 3 Streaming Technology. For more information, contact:

    Virtual Training Company
    40 South Loudoun Street
    Winchester, VA 22601
    Sales: 1-888-872-4623
    www.vtco.com

- Internet Resources

  - www.graphicsresourcecenter.com—The Graphics Resource Center offers the publishing and printing industry the following services: virtual trade show, knowledge center, news room, supply center, and human resource center.

  - www.desktoppublishing.com—Desktop Publishing.com contains EPP software reviews, online bookstore, features section, links to other EPP sites, and much more for the EPP professional.

  - www.harperhouse.com—The Harper House Web site contains information on electronic prepress and printing from a service provider's viewpoint. This Web site also contains links to other graphic arts industry Web sites.

Written Test

Name ______________________________

Date ______________________ Score __________

Objective 1

Match the terms with their definitions.

1. Clip art
2. Customizing
3. Dialog box
4. Dictionary
5. Global selection
6. Handles
7. Import
8. Mouse-driven software
9. Palette
10. Text block

_____ a. Listing of words that is used to check spelling and suggest hyphenation

_____ b. Boundaries around a graphic image or text block indicating it has been selected

_____ c. Electronically stored artwork that can be inserted into a document during page layout

_____ d. Process that searches and/or applies an attribute or feature to an entire document

_____ e. Arranging elements of design and type to meet specifications

_____ f. A window that holds tools, colors, patterns, or styles

_____ g. Area in publication window that requests information or shows status of a process taking place

_____ h. Unit of text that can be broken into smaller units, consolidated with other units, or moved

_____ i. To load a document or graphics file from one source to another

_____ j. Software that performs functions based upon operator's selections from menus

Written Test

Objective 2

Match the types of software used in EPP systems with their uses.

1. Font-management
2. Illustration
3. Image-editing
4. Operating system
5. Page-layout
6. Preflight
7. Word-processing

_____ a. Software used to create graphics

_____ b. Software used to check page-layout files for potential output problems

_____ c. Software used to tell computer how to manipulate information and run various programs

_____ d. Software used to consistently and reliably handle all of the fonts on a computer

_____ e. Software used to create or revise text

_____ f. Software used to edit or change a photographic image

_____ g. Software used to arrange and manipulate text and graphics

Objective 3

List six factors to consider before purchasing EPP software. Write your answers on the blanks provided.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

d. ______________________________

____

e. ______________________________

____

f. ______________________________

____

Objective 4

List four characteristics of quality word-processing software. Write your answers on the blanks provided.

a. ____
____

b. ____
____

c. ____
____

d. ____
____

Objective 5

Select true statements concerning characteristics of quality illustration software by placing an "X" in the appropriate blanks.

_____ a. Provides a merge feature

_____ b. Allows for graphics to be rotated, scaled, reflected, and skewed

_____ c. Allows files to be exported into page-layout software

_____ d. Provides a spell-check feature

_____ e. Allows multiple objects to be grouped

_____ f. Allows input of large amount of text

_____ g. Provides search-and-replace features

_____ h. Provides tools and filters for creating blends and masks

_____ i. Provides printing functions allowing graphics to be color separated, tiled, and scaled

Objective 6

Complete the following statements concerning characteristics of quality image-editing software by writing the correct answers in the blanks below.

a. Provides for ________________ of monitor for color accuracy between images and output devices

b. Allows for image editing using ________________ , such as blur, stylize, sharpen, render, and distort

c. Provides printing functions for color output and _______ ___________ .

d. Provides editing features including ______________, rotating, reflecting, and cropping

e. Provides palette for creation of multiple layers that can be reordered, saved, or ______________ between documents

f. ____________ graphics from various sources such as illustration software, scanning software, or electronic media

Objective 7

Select true statements concerning characteristics of quality preflight software by placing an "X" in the appropriate blanks.

_____ a. Provides a font check that inspects documents for missing screen and printer fonts

_____ b. Allows for graphics to be rotated, scaled, reflected, and skewed

_____ c. Provides a spell-check feature

_____ d. Provides an image check that inspects documents for missing graphic files

_____ e. Allows multiple objects to be grouped

_____ f. Allows input of large amount of text

_____ g. Provides a color check that inspects documents for unused spot colors

_____ h. Generates a report document that details all potential prepress problems

Objective 8

List four characteristics of quality page-layout software. Write your answers on the blanks provided.

a. ____

____

b. ____

____

c. ____

____

d. ____

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____

Objective 9

Match basic page-layout software features with their descriptions.

1. Cursor-position indicators
2. Pasteboard
3. Publication-window size selection
4. Pull-down menus
5. Rulers
6. Scroll bars
7. Tool box

_____ a. Blank space surrounding page in publication window; used to temporarily store text and graphics

_____ b. Listings of options that drop down when selected by mouse or keystroke

_____ c. Options providing a variety of window views selected according to amount of detail needed to be seen for a particular task

_____ d. Icons and/or markers that appear on rulers and within text to indicate cursor position in publication window

_____ e. Measuring edges used in placing text and graphics on page in publication window

_____ f. Menu of tools available to point, edit text, crop, or draw

_____ g. Tools used to move page horizontally and vertically inside publication window

Objective 10

Match basic page-layout text-tool operations features with their definitions.

1. Copy and paste text
2. Cut and paste text
3. Edit text
4. Move or adjust text
5. Type text

_____ a. To delete, insert, or rearrange text

_____ b. To input text

_____ c. To mark text so that it will be removed from its current position, temporarily stored in the computer's memory, and then retrieved in another position

_____ d. To rearrange an area of text that is defined by boundaries

_____ e. To mark text so that it will be left in its current position, while a copy is temporarily stored in the computer's memory, and then retrieved in another position

Written Test

Objective 11

Match page-setup features with their descriptions.

1. Columns
2. Margin settings
3. Page orientation
4. Pagination
5. Style sheets
6. Templates

______ a. Page numbering within a book or publication

______ b. Dialog box for setting left, right, top, and bottom page limits

______ c. Dialog box for creating either equal- or unequal-size column positions and numbers

______ d. Permanent page formats that can be copied and used repeatedly

______ e. Dialog box for selecting either portrait or landscape page position

______ f. Items that customize a format, such as margins, columns widths, border thicknesses, and typestyles

Objective 12

Match paragraph-specification features with their descriptions.

1. Alignment
2. Auto text flow
3. Paragraph-specifications
4. Tabs and indents
5. Text flow
6. Text wrap/runaround

______ a. Options selected to make either global or individual changes to a selection including hyphenation, alignment, space before and after, etc.

______ b. Option selected to move text from page to page and column to column

______ c. Options selected to position text flush left, flush right, centered, or justified

______ d. Option selected to allow text to flow automatically from page to page and column to column when using place-text function

______ e. Options selected to align text lines in specific increments left, right, center, decimal, or dot leader

______ f. Option selected to adjust the placement of text around graphics

Objective 13

Define type-specification features. Write your definitions on the blanks provided.

a. Hyphenation— ____________________

b. Kerning— ____________________

c. Tracking— ____________________

d. Leading— ____________________

e. Type-specification changes— ____________________

Objective 14

Describe editing features. Write your descriptions on the blanks provided.

a. Text tool— ____________________

b. Undo command— ____________________

c. Clipboard— ____________________

d. Page changes— ____________________

Objective 15

Describe three of the problems encountered when using office software for print production.

a. ____________________

b. ____________________

c. ____________________

*Permission to duplicate this test is granted.

Answers to Written Test

Objective 1

a. 4
b. 6
c. 1
d. 5
e. 2
f. 9
g. 3
h. 10
i. 7
j. 8

Objective 2

a. 2
b. 6
c. 4
d. 1
e. 7
f. 3
g. 5

Objective 3

Any six of the following:

a. Can software efficiently produce types of publications desired?
b. Is software compatible with existing hardware or hardware to be purchased?
c. Will software utilize computer's and printer's total capabilities?
d. Is the computer's RAM memory sufficient to operate software?
e. Is software compatible with existing software?
f. Is software mouse-driven?
g. Does software provide error messages?
h. Does software supply thorough yet easy-to-understand documentation?
i. Does software provide technical support at no or low cost?
j. Can software be upgraded, or can upgrades be obtained in the future?
k. Is software competitively priced with programs with similar features?
l. Is software supported by output service providers?

Objective 4

Any four of the following:

a. Allows input of large amount of text in a convenient, fast, and efficient manner
b. Provides easy access to formatting features, such as setting tabs and margins
c. Provides easy access to editing features, such as moving, copying, inserting, and deleting text
d. Provides a spell-check feature
e. Provides search-and-replace feature for words, letters, numbers, and phrases
f. Allows files to be exported in a pure ASCII format
g. Provides a merge feature

Objective 5

b, c, e, h, i

Answers to Written Test

Objective 6

a. Calibration
b. Filters
c. Film separation
d. Scaling
e. Copied
f. Imports

Objective 7

a, d, g, h

Objective 8

Any four of the following:

a. Provides templates or outlines for arranging text and graphics
b. Imports text and graphics from various sources, such as word processing, illustration, or image-editing software
c. Allows text and graphics to be moved (together or separately) to fit available space
d. Provides text-editing features, such as cut, copy, and paste
e. Provides features for customizing paragraphs, typestyles, and type sizes throughout document
f. Provides features for adding graphic elements, such as lines, boxes, and circles
g. Provides pull-down menus accessed by mouse or mouse/keystroke combinations
h. Allows multiple pages to be inserted, moved, and deleted
i. Provides text wrap or runaround features
j. Provides advanced text editing features, such as spell check, hyphenation and justification, tracking and kerning tables, and auxiliary dictionaries
k. Allows style sheets to be created that include features such as rules, tabs, paragraph settings, and type attributes

Objective 9

a.	2	e.	5
b.	4	f.	7
c.	3	g.	6
d.	1		

Objective 10

a.	3
b.	5
c.	2
d.	4
e.	1

Objective 11

a.	4	d.	6
b.	2	e.	3
c.	1	f.	5

Objective 12

a.	3	d.	2
b.	5	e.	4
c.	1	f.	6

Objective 13

a. Hyphenation—Option allowing dictionary- or operator-prompted word division at end of text lines
b. Kerning—Option allowing automatic or manual adjustment of spacing between text characters
c. Tracking—Option allowing adjustment of letter and word spacing within paragraph or selection
d. Leading—Option allowing automatic or manual adjustment of vertical spacing between text lines
e. Type-specification changes—Options allowing global or manual adjustment of typefaces and type sizes

Objective 14

a. Text tool—Options used to insert or delete text or change type specifications
b. Undo command—Options used to restore deleted material
c. Clipboard—Options used to temporarily store graphics or text that was cut or copied
d. Page changes—Options used to insert, delete, or rearrange text or graphics on page in publication window

Objective 15

Any three of the following:

a. Service provider support—Office software may not be supported by service bureaus. When accepting office software, service providers cannot guarantee final output since the software used is not a supported industry standard. Printing software is the industry standard and thus is supported by output service providers. This software has the widest user base, highest number of trained operators, and the highest rate of output success.
b. Color models—Office software may not include color models for standard printing inks including CMYK and Pantone.
c. Trapping—Office software may not include options for color trapping.
d. Features—Office software is created for low-end output devices and thus does not provide many of the features and options necessary to create a document for printing production.

Prerequisites:
None

Learning Activities Sheet

Student Name ______________________________

Place a checkmark in the appropriate box as you complete each of the steps below.

☐ 1. **Take** Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 2. **Read** Objective Sheet.

☐ 5. **Study** Information Sheet, Objectives 1 through 4.

☐ 6. **Observe** Demonstration of procedures to be used in completing Job Sheet 1.

☐ 7. **Do** Job Sheet 1, "Create Word-Processed Document."

☐ 8. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 9. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 1 and repeat steps 6 and 7.

☐ 9. **Study** Information Sheet, Objectives 5 through 8.

☐ 10. **Research** Online resources regarding EPP software. Visit www.desktoppublishing.com as one of your sources.

☐ 11. **Study** Information Sheet, Objectives 9 through 15 and Student Supplement 1.

☐ 12. **Do** Assignment Sheet 1, "Evaluate a Page-Layout Software Package" and Assignment Sheet 2, "Examine Page-Layout Software Manual for Basic Operations."

☐ 13. **Stop** Have instructor evaluate the completed assignment sheets and if the evaluation is satisfactory, continue to step 14. If the evaluation is not satisfactory, repeat step 12.

Learning Activities Sheet

☐ 14. **Observe** Demonstration of procedures to be used in completing Job Sheets 2, 3, and 4.

☐ 15. **Do** Job Sheet 2, "Practice Using Publication-Window Features," Job Sheet 3, "Practice Using Page-Specification Features," and Job Sheet 4, "Practice Using Paragraph- and Type-Specification Features and Flow Text."

☐ 16. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 2, 3, and 4, continue to step 17.

☐ 17. **Observe** Demonstration of procedures to be used in completing Job Sheets 5, 6, and 7.

☐ 18. **Do** Job Sheet 5, "Create, Edit, and Move a Headline," Job Sheet 6, "Place a File and Then Edit and Move Sentences Within File Paragraphs," and Job Sheet 7, "Copy/Paste, Cut/Paste, and Move a Paragraph."

☐ 19. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 5, 6, and 7, continue to step 20.

☐ 20. **Observe** Demonstration of procedures to be used in completing Job Sheet 8.

☐ 21. **Do** Job Sheet 8, "Create a Letterhead."

☐ 22. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 23. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 8 and repeat step 21.

☐ 23. **Check** With instructor for any additional assignments to be completed.

Learning Activities Sheet

☐ 24. **Do** Additional assignments listed below.

☐ 25. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 26. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

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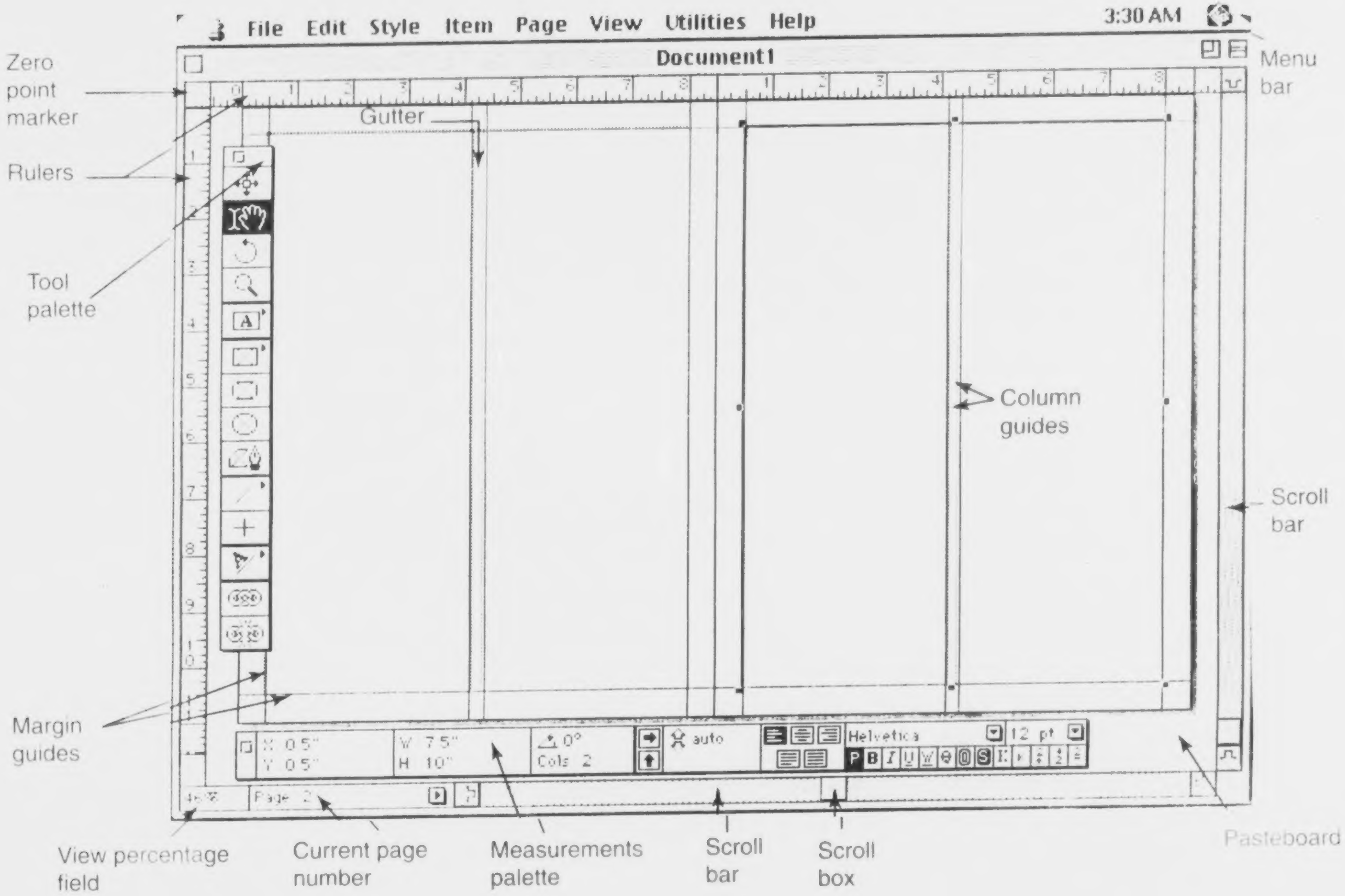
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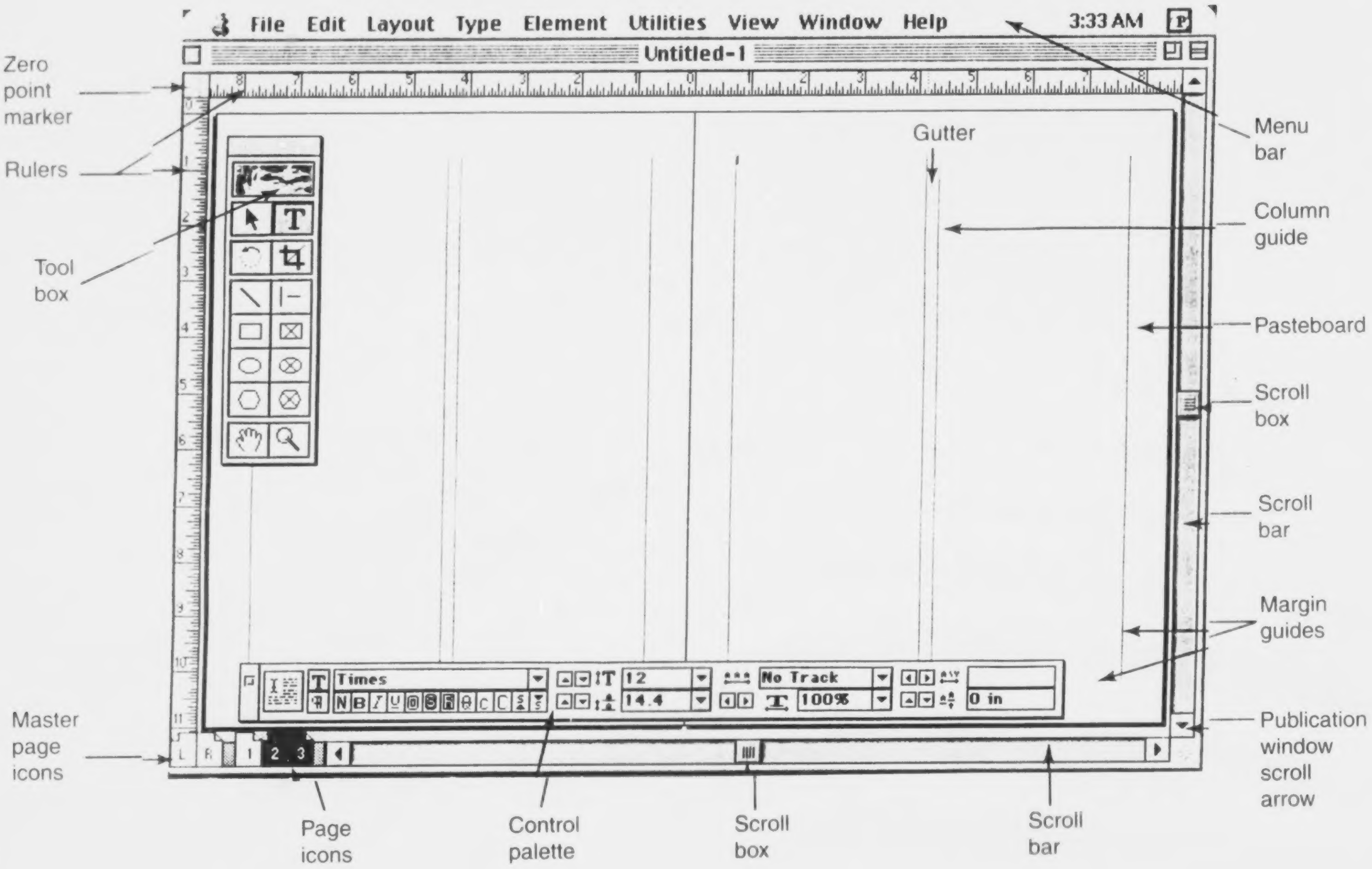
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Unit Contents

Teacher Page

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Information Sheet 4–5
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  2—Identify Fonts Available on Electronic Prepress Workstation ... 4–23
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  2—Select Type Using Guidelines for Readability and Legibility 4–29
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Instructional Plan

Suggested Activities

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.
- Make transparencies from the transparency masters included in this unit. These appear in the teacher edition only.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.

Suggested Activities

- Discuss and demonstrate the job sheets. Make sure all required tools, equipment, and materials are available. Review with students the criteria for evaluation of these activities and the rating scale that will be used to indicate job performance.

Teaching Suggestions

- Download or order software demos of Adobe Type Manager Deluxe, Extensis SuitCase, or Alsoft MasterJuggler if font management software is not available in your lab. See "Suggested Supplemental Resources" section for more information.
- Prepare a display of appropriate and inappropriate uses of type.
- Demonstrate to students key caps, Multiple Master fonts, font management software, and any other font utilities used in the classroom.
- Demonstrate how to use a line gauge to measure type, leading, and line length.

  Note: The measurements shown on the line gauges illustrated in TM 2 and TM 3 are not exact. They are only intended to serve as examples of line gauges.
- Have students review the user's manual for all font management software utilized in the classroom.
- Have students review the Adobe Type Catalog to familiarize themselves with the large variety of typefaces on the market and their characteristics and relative categories. Students may want to refer to this catalog when completing Assignment Sheet 1.
- Demonstrate leading and kerning procedures in page-layout software.
- Have students collect samples of print media that use type in effective design elements.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.
- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.

- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. See Answers to Assignment Sheets for correct answers where applicable. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.

- Evaluate the job sheets. When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in the student edition. Then observe the student performing the procedure.

  Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily completed the process step(s) for each checkpoint area. If the student is unable to complete the procedure correctly, have the student review the materials and try again.

  Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria that are provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

  Two sample performance evaluation keys have been provided below. Many other keys are available. Select one rating (grading scale) that best fits your program needs.

  Sample A

  4—**Skilled**—Can perform job with no additional training.
  3—**Moderately skilled**—Has performed job during training program; limited additional training may be required.
  2—**Limited skill**—Has performed job during training program; additional training is required to develop skill.
  1—**Unskilled**—Is familiar with process, but is unable to perform job.
  0—**No exposure**—No information or practice provided during training program.

  Sample B

  Yes—Can perform job with no additional training.
  No—Is unable to perform job satisfactorily.

- Give and evaluate the posttest.

- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.

- Reteach and retest as required.

Suggested Activities

Resources Used in Developing This Unit

Print Media

- Hengesbaugh, Mark. *Typography for Desktop Publishers.* Homewood, IL: Business One Irwin, 1991.
- Licklider, Cheryl. *Graphic Arts: Orientation, Composition, and Paste-Up.* Stillwater, OK: Multistate Academic and Vocational Curriculum Consortium, Inc., 2000.
- *The Official Adobe Print Publishing Guide.* Indianapolis: Adobe Press/Macmillan Computer Publishing, 1998.
- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete.* Indianapolis: Hayden Books, 1996.
- Parker, Roger C. *Looking Good in Print,* 4th ed. Scottsdale, AZ: The Coriolis Group, 1998.
- Skillin, Marjorie E. *Words Into Type,* 3d ed. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1974.
- Williams, Robin. *The Mac Is Not a Typewriter.* Berkeley, CA: Peachpit Press, 1990.
- Williams, Robin. *The Non-Designer's Type Book.* Berkeley, CA: Peachpit Press, 1998.
- Williams, Robin. *The PC Is Not a Typewriter.* Berkeley, CA: Peachpit Press, 1991.
- Williams, Robin, and Steve Cummings. *Jargon.* Berkeley, CA: Peachpit Press, 1993.

Suggested Supplemental Resources

Print Media

- Goldberg, Ron, and Frank J. Romano. *Digital Typography Primer.* Sewickley, Pennsylvania: GATFPress, 1999.

For information concerning the above book, contact:

Graphic Arts Technical Foundation
200 Deer Run Road
Sewickley, PA 15143-2600
Tel: 1-800-662-3916
www.gatf.org

- Williams, Robin. *How to Boss Your Fonts Around*, 2d ed. Berkeley, CA: Peachpit Press, 1998.—This is a guidebook to the basics of fonts which tries to help the reader identify typefaces, install and organize fonts, and work with printers and service bureaus.

  Available from:

  Peachpit Press
  2414 Sixth Street
  Berkeley, CA 94710
  Toll-free: 1-800-283-9444
  www.peachpit.com

- Spiekermann, Erik, and E.M. Ginger. *Stop Stealing Sheep and Find Out How Type Works*. San Jose, CA: Adobe Press, 1993.—This creative text explores terminology, rules, and aesthetics of typography in order to make it easier to use and understand.

  Adobe Press books are available wherever books on computing or digital communications are sold, including local bookstores, numerous computer catalog vendors, software retailers, and many online booksellers such as Amazon.com. Or you can order titles directly from Peachpit Press by calling 1-800-283-9444.

Electronic Media

- Software Downloads
  - Adobe Systems Incorporated
    345 Park Avenue
    San Jose, CA 95110-2704
    Tel: 408-536-6000
    Fax: 408-537-6000
    To download free demos of Adobe font management software go to www.adobe.com
    To request a demo CD by mail, call 1-800-685-3587
  - Extensis Suitcase
    To download and preview font management software go to www.extensis.com
  - MasterJuggler Pro
    To download and preview font management software go to www.alsoft.com
  - TypeTamer
    To download and preview font management software go to www.typetamer.com

Suggested Activities

- Video
  - *Desktop Design I: Basic Electronic Graphic Techniques*—Shows a balanced overview of desktop design techniques and typesetting principles; demonstrates elements of good design and typography No. GLV-2020-V49

    Available from:

    NIMCO, Inc.
    P.O. Box 9
    102 Hwy. 81 North
    Calhoun, KY 42327-0009
    Tel: 1-800-962-6662
    www.nimcoinc.com

- Internet Resources
  - www.studiomotiv.com/counterspace/—Provides information on typography and its history
  - www.fontsite.com—The Font Site is an online magazine for the type and graphics professional. It contains typography guidelines, font downloads, and archives of past issues.
  - www.cyber-north.com/fonts—Provides information about the history of typography
  - www.monotype.com—Maintained by Agfa and contains information for font professionals
  - www.will-harris.com—Contains information on fonts, typography, and design
  - www.typographic.rsub.com—Contains a timeline of recent typography, gallery of typographic images, typographic studies, glossary, and suggested materials on type and typography
  - www.itcfonts.com/itc/ulc/index.html—U&lc Online replaces the physically printed version of Upper & Lower Case. It is published by the International Typeface Corporation.

Answers to Assignment Sheets

Assignment Sheet 1

Measure Type

1.
   a. Font—Times
   b. Point size—12 point
   c. Leading—14 point
   d. Line length—20p6
   e. Alignment—Justified

2.
   a. Font—Times Italic
   b. Point size—10 point
   c. Leading—16 point
   d. Line length—16p6
   e. Alignment—Left

3.
   a. Font—Helvetica Bold
   b. Point size—36 point
   c. Line length—17p6

4.
   a. Font—Hobo
   b. Point size—18 point
   c. Leading—18 point
   d. Line length—18p
   e. Alignment—Right

5.
   a. Font—Avant Garde
   b. Point size—14 point
   c. Leading—18 point
   d. Line length—18p
   e. Alignment—Center

6.
   a. Drop cap font—Goudy Text MT; Text font—Helvetica and Helvetica Bold
   b. Point size—8 point
   c. Leading—10 point
   d. Line length—14.9p
   e. Alignment—Justified

Assignment Sheet 2

Identify Fonts Available on Electronic Prepress Workstation

Evaluated to the satisfaction of the instructor

Written Test

Name ______________________________

Date ______________________ Score __________

Objective 1

Match the terms with their definitions.

1. Body type
2. Characters
3. Display type
4. Font management utilities
5. Legibility
6. Lowercase
7. Oblique
8. Orphan
9. Readability
10. River
11. Straight type
12. Tabulated type
13. Typography
14. Uppercase
15. Widow

_____ a. Small letters of the alphabet

_____ b. End of a paragraph that is hyphenated or the last line of a paragraph that contains fewer than seven characters

_____ c. Type 12 points or smaller in size

_____ d. Type 14 points or larger in size

_____ e. The art and science of working with type

_____ f. Body type set in normal paragraph form

_____ g. Type that is *slanted*; typical of most sans serif "italic" faces

_____ h. Individual letters, numbers, punctuation marks, or symbols

_____ i. Type set in charts, tables, formulas, or other elements requiring tab settings to be specified

_____ j. How quickly a short body of text is recognized

_____ k. Last line of a paragraph that falls at the top of the next column or page

_____ l. Distracting pattern of white space running vertically down through body copy; most common in justified alignment

_____ m. How easily large bodies of text can be read

_____ n. Capital letters of the alphabet

_____ o. Software that manages the fonts available to the system by allowing the user to turn fonts on and off as needed

Written Test

Objective 2

Match the terms related to punctuation marks and symbols used in EPP with their definitions.

1. Dingbat
2. Ellipsis
3. Em dash
4. En dash
5. Ligature
6. Small caps
7. Smart quotes

_____ a. A dash the width of the capital letter "M" (18 units); used to set off a phrase with a lot of commas or to mark an abrupt change in thought or sentence structure

_____ b. Two or more characters combined in one unit

_____ c. A typographic decorative character such as a bullet, star, etc.

_____ d. A dash the width of the capital letter "N" (9 units); used to indicate duration

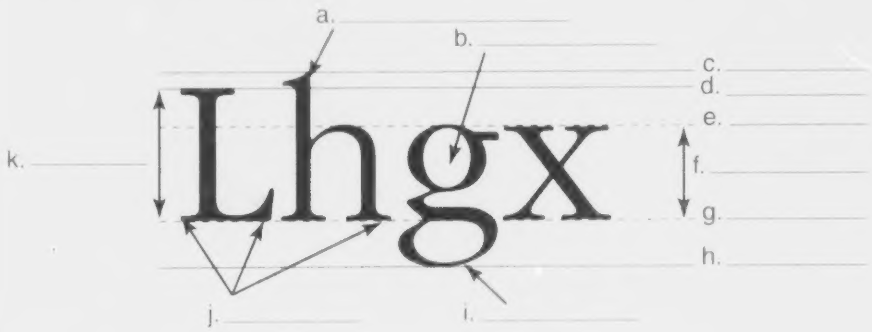
_____ e. Capital letters that are the same size as the x-height of the typeface

_____ f. A character used to indicate where text has been omitted from the original material

_____ g. True typographer's quotes; often called "curly quotes"

Objective 3

Identify the anatomy of a type character by writing the correct answers in the blanks in the following illustration.



Written Test

Objective 4

Match the terms related to basic type measurements with their definitions.

1. E-scale
2. Leading
3. Line gauge
4. Line length
5. Pica
6. Point
7. Type size

_____ a. The measurement in points of the distance between the ascender line and the descender line of a type character

_____ b. A printer's ruler used to measure type that is calibrated in picas, points, and inches

_____ c. A tool used to measure type size using the capital letter E as a reference

_____ d. Measurement in picas of distance between the beginning and ending of a line of type or width of a column

_____ e. Unit of measure equal to $^1/_{72}$ inch

_____ f. The space in points between baselines of two lines of text

_____ g. Unit of measure equal to 12 points or $^1/_6$ inch

Objective 5

Distinguish among the terms typeface, type family, typestyle, and font by placing a "T" next to the definition of typeface, a "TF" next to the definition of type family, a "TS" next to the definition of typestyle, and an "F" next to the definition of font.

_____ a. Typefaces that show a marked resemblance and bear a common name but have individual design variances such as weight, width, and posture

_____ b. Complete set of type of a particular face, style, and point size

_____ c. Form and shape of a group of letters and numbers

_____ d. Type modification such as condensed, italic, bold, or bold italic

Objective 6

Match typeface classifications with their characteristics.

1. Decorative
2. Sans serif
3. Script
4. Serif

_____ a. Characters that are usually ornamental

_____ b. Characters that are uniform in thickness and do not have serifs

_____ c. Characters that look like handwriting, hand-lettering, or calligraphy

_____ d. Characters that vary in thickness and have a stroke that projects from the top or bottom of the main stroke of the character

Written Test

Objective 7

Match type adjustments commonly required in EPP with their definitions.

1. Kerning
2. Leading
3. Letterspacing
4. Tracking
5. Word spacing

_____ a. Increasing or decreasing space between all characters in one or more words

_____ b. Adjusting the space between individual characters to create a visually consistent look

_____ c. Applying an overall kerning value to all character pairs in a selected text block

_____ d. Increasing or decreasing space between lines of type to improve legibility or to vertically fill page of type

_____ e. Increasing or decreasing amount of space between words

Objective 8

Select true statements concerning factors affecting readability and legibility in typographic material by placing an "X" next to the true statements.

_____ a. Sans serif typefaces are the most readable.

_____ b. Moderate x-height ratios improve readability.

_____ c. Lowercase letters are more difficult to read than uppercase letters.

_____ d. Uneven letter and word spacing disturbs our natural reading pattern, causing the eyes to make constant adjustments for words and lines that are too tight or loose.

_____ e. Line lengths set too long make it difficult to find the beginning of the next line.

_____ f. Line spacing that is too tight makes it difficult to separate individual words and phrases.

_____ g. Extra bold, extra light, italic, and scripts are easiest to read and should be used as often as possible.

_____ h. Reverse type causes words to appear larger.

Objective 9

Complete statements concerning font characteristics by circling the correct answers.

a. A font usually includes (**both uppercase and lowercase, only uppercase**) alphabet letters.

b. A font may not include (**boldface characters, punctuation marks**).

c. A font may include several (**number sets, symbol sets**).

d. (**Expert sets, The standard character set**) are/is included on many resident fonts found on laser printers.

Objective 10

Match types of font technologies with their descriptions.

1. Adobe Type 1 fonts
2. Multiple Master fonts
3. Printer fonts
4. Screen fonts
5. TrueType fonts

_____ a. PostScript font technology preferred by output service providers because of its predictable system behavior and reliable output

_____ b. Scalable, vector-based mathematical information that is stored on computer's hard drive and downloaded to output device when file is sent to print

_____ c. Apple's font technology consisting of only a suitcase file; not suitable for output to an imagesetter or digital press

_____ d. Font software that allows the user to create variations of a typeface from light to bold and condensed to expanded

_____ e. Fonts that contain the 72-dpi font rendering information that appears on the monitor; stored in "suitcases" on the computer's hard drive

Objective 11

Complete statements concerning font issues to consider when sending EPP files to an output service provider by circling the correct answers.

a. Use the appropriate (**font, attribute on the style palette**) to create bold or italic text.

b. Use the (**style palette, font utility**) in the page-layout program to determine which fonts need to be supplied or packaged with the EPP file(s).

c. Provide a copy of (**only the screen fonts, both the screen font and printer font**) for every typestyle used in each document sent to an output service provider.

d. (**Do, Do not**) mix TrueType and PostScript fonts in a document.

Written Test

Objective 12

Select true statements concerning the characteristics of font management utilities by placing an "X" next to the true statements.

_____ a. Alleviates the need to search through hundreds of fonts to find a specific font

_____ b. Causes font naming and numbering conflicts

_____ c. Slows down system and application startups

_____ d. Loads only the fonts currently being used for output in RAM memory

_____ e. Prevents duplicating and misplacing fonts

_____ f. ATM automatically generates any size bitmap font from outline-font data by rasterizing the outlines and translating it into a digital bitmap to be represented on the monitor

Objective 13

Select true statements concerning font transferability issues by placing an "X" next to the true statements.

_____ a. If the fonts used in a document are not available on the computer, the page-layout program will display a dialog box that states that fonts are missing.

_____ b. When creating vector graphics with fonts, there is no need to convert all text to paths.

_____ c. If fonts are missing, all you need to do is restart your computer and the fonts will automatically load on your computer.

***Permission to duplicate this test is granted.**

Answers to Written Test

Objective 1

a. 6
b. 15
c. 1
d. 3
e. 13
f. 11
g. 7
h. 2
i. 12
j. 5
k. 8
l. 10
m. 9
n. 14
o. 4

Objective 2

a. 3
b. 5
c. 1
d. 4
e. 6
f. 2
g. 7

Objective 3

a. Ascender
b. Counter
c. Ascender line
d. Cap height
e. Mean line
f. x-height
g. Baseline
h. Descender line
i. Descender
j. Serifs
k. Body

Objective 4

a. 7
b. 3
c. 1
d. 4
e. 6
f. 2
g. 5

Objective 5

a. TF
b. F
c. T
d. TS

Objective 6

a. 1
b. 2
c. 3
d. 4

Objective 7

a. 3
b. 1
c. 4
d. 2
e. 5

Objective 8

b, d, e, f

Answers to Written Test

Objective 9	a. Both uppercase and lowercase b. Boldface characters c. Symbol sets d. The standard character set
Objective 10	a. 1 b. 3 c. 5 d. 2 e. 4
Objective 11	a. Font b. Font utility c. Both the screen font and printer font d. Do not
Objective 12	a, d, e, f
Objective 13	a

Prerequisites:
None

Learning Activities Sheet

Student Name ______________________________

Place a checkmark in the appropriate box as you complete each of the steps below.

☐ 1. **Take** Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 2. **Read** Objective Sheet.

☐ 3. **Study** Information Sheet, Objectives 1 through 4.

☐ 4. **Do** Assignment Sheet 1, "Measure Type."

☐ 5. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 6. If the evaluation is not satisfactory, repeat steps 3 and 4.

☐ 6. **Study** Information Sheet, Objectives 5 and 6.

☐ 7. **Do** Assignment Sheet 2, "Identify Fonts Available on Electronic Prepress Workstation."

☐ 8. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 9. If the evaluation is not satisfactory, repeat steps 6 and 7.

☐ 9. **Study** Information Sheet, Objective 7.

☐ 10. **Observe** Demonstration of procedures to be used in completing Job Sheet 1.

☐ 11. **Do** Job Sheet 1, "Practice Adjusting Leading, Kerning, and Letterspacing."

☐ 12. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 13. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 1 and repeat steps 10 and 11.

Learning Activities Sheet

☐ 13. **Study** Information Sheet, Objective 8.

☐ 14. **Observe** Demonstration of procedures to be used in completing Job Sheet 2.

☐ 15. **Do** Job Sheet 2, "Select Type Using Guidelines for Readability and Legibility."

☐ 16. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 17. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 2 and repeat steps 13 through 15.

☐ 17. **Study** Information Sheet, Objectives 9 through 13.

☐ 18. **Observe** Demonstration of procedures to be used in completing Job Sheet 3.

☐ 19. **Do** Job Sheet 3, "Perform Font Management Activities."

☐ 20. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 21. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 3 and repeat steps 17 through 19.

☐ 21. **Check** With instructor for any additional assignments to be completed.

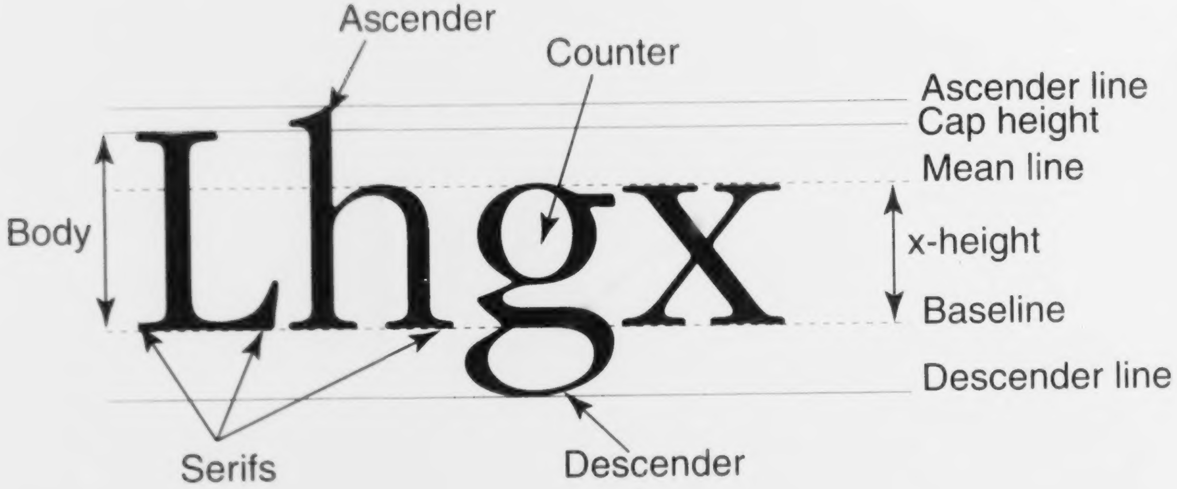
☐ 22. **Do** Additional assignments listed below.

☐ 23. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

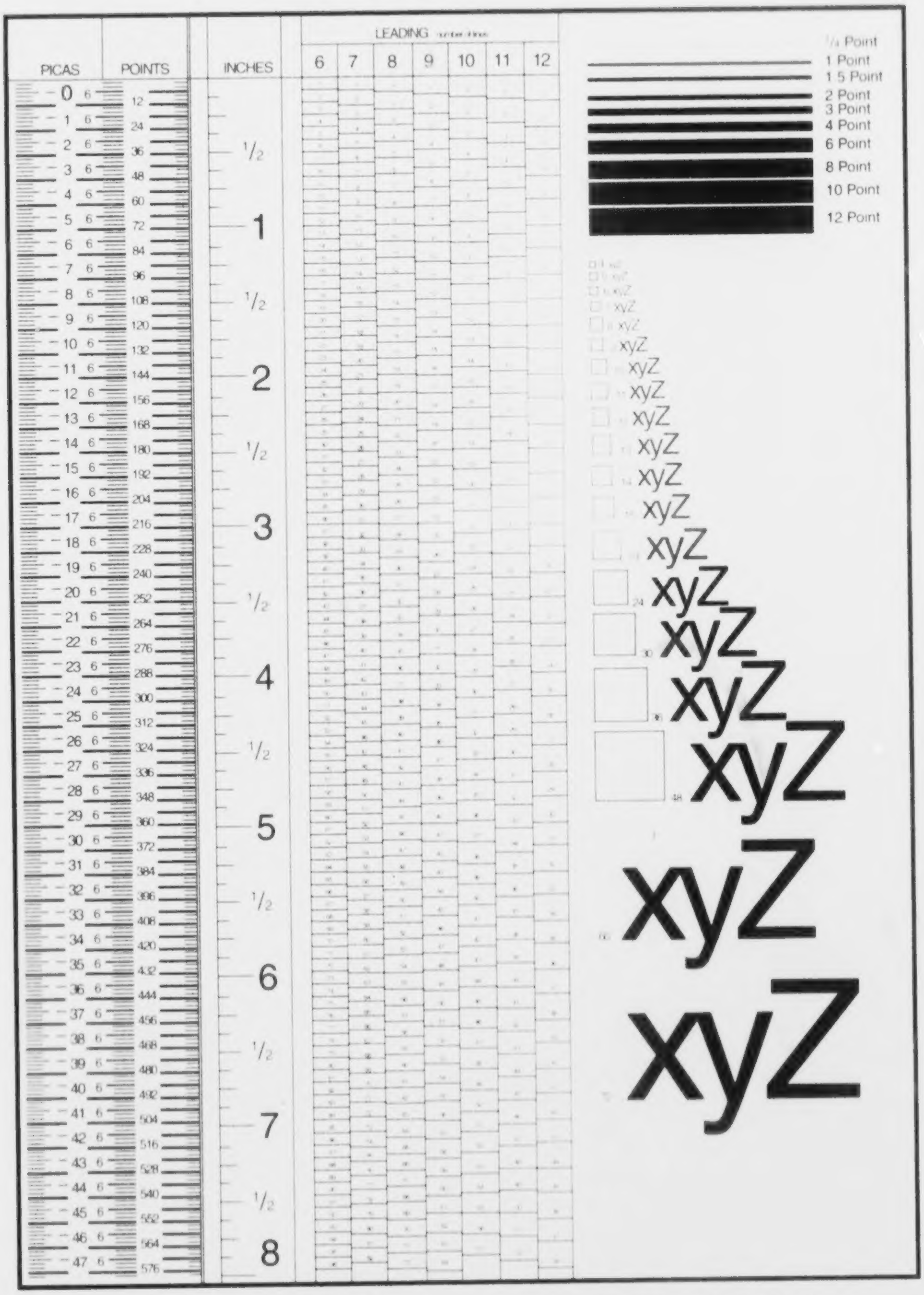
☐ 24. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

***Permission to duplicate this form is granted.**

Anatomy of a Type Character


Ascender
Counter
Ascender line
Cap height
Mean line
Body
x-height
Baseline
Descender line
Serifs
Descender
Lhgx

Line Gauge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Note: Measurements are not exact.

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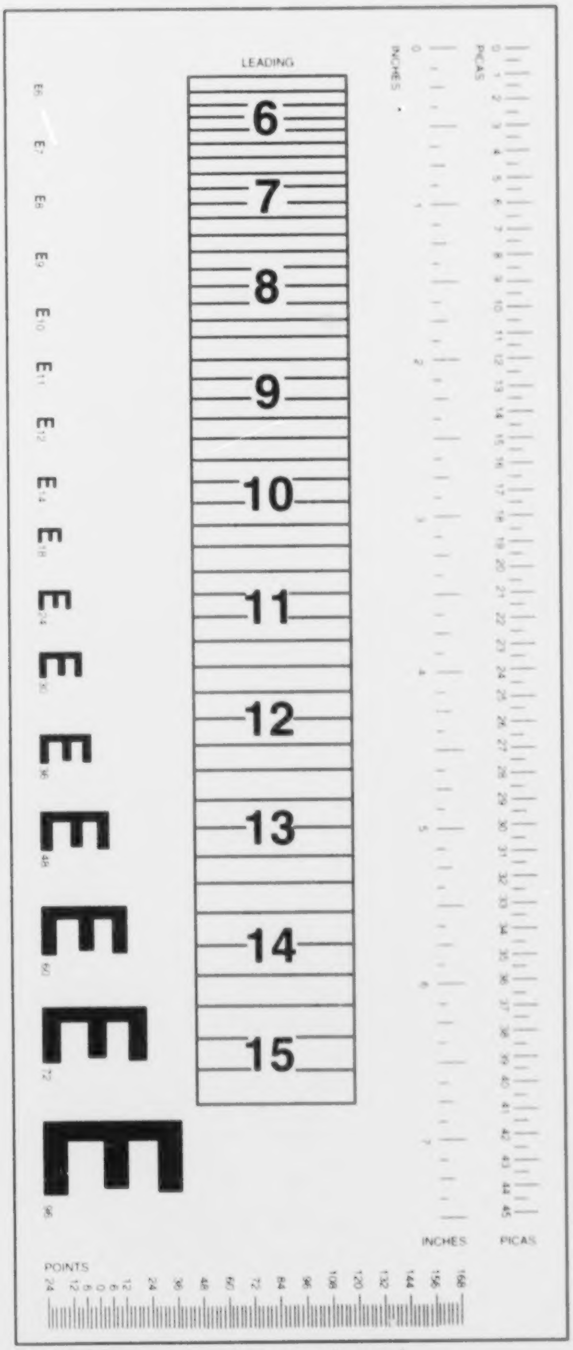
TM 2

Line Gauge (continued)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Note: Measurements are not exact.

TM 3

Unit 5 Document Design

Unit Contents

Teacher Page

Teacher Components

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Written Test 5–9
Answers to Written Test 5–13
Learning Activities Sheet 5–15

Student Page

Student Components

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Information Sheet 5–5

Student Supplements

1—Effective Use of Proportion 5–17
2—Effective Use of Direction (Movement) 5–19
3—Effective Use of Contrast 5–21
4—Effective Use of Rules 5–23
5—Graphic to be Rescaled in Job Sheet 1 5–25
6—Using Type and Screen Tints as Design Techniques to Create Contrast 5–29

Assignment Sheets

1—Evaluate the Design of a Magazine Ad 5–31
2—Design a Single-Page Flyer 5–35
3—Examine Illustration Software Manual for Basic Operations . . . 5–39

Job Sheets

1—Rescale Graphics 5–43
2—Create a Computer-Generated Grid 5–51
3—Create a Single-Page Flyer 5–55
4—Add Contrast Using Special Effects Type and Screen Tints 5–57
5—Create a Logo Design 5–59
6—Create Stationery Utilizing Logo Design 5–61
7—Create a Spot Color Brochure 5–63

Instructional Plan

Suggested Activities

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.

Suggested Activities

- Discuss and demonstrate the job sheets. Make sure all required tools, equipment, and materials are available. Review with students the criteria for evaluation of these activities and the rating scale that will be used to indicate job performance.

Teaching Suggestions

- Collect examples of appropriate and inappropriate design.
- Collect samples of a design that show it in the various stages of the design process: thumbnail sketches, rough layouts, completed EPP product.
- Create some designs utilizing design principles taught in this unit.
- Collect samples of spot color used in printed material.
- Collect samples of magazine articles to be used with Assignment Sheet 1.
- Plan a visit to a commercial art department or advertising agency to observe design principles being utilized.
- Invite an art director, graphic designer, or art teacher to class to discuss art, color, and principles of design.
- Have students collect examples of print media that use design elements appropriately.
- Refer to Unit 3, Objective 5 for characteristics of quality illustration software when discussing Assignment Sheet 3.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.
- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.
- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. See Answers to Assignment Sheets for correct answers where applicable. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.
- Evaluate the job sheets. When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in the student edition. Then observe the student performing the procedure.

Suggested Activities

Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily completed the process step(s) for each checkpoint area. If the student is unable to complete the procedure correctly, have the student review the materials and try again.

Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria that are provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

Two sample performance evaluation keys have been provided below. Many other keys are available. Select one rating (grading scale) that best fits your program needs.

Sample A

4—**Skilled**—Can perform job with no additional training.
3—**Moderately skilled**—Has performed job during training program; limited additional training may be required.
2—**Limited skill**—Has performed job during training program; additional training is required to develop skill.
1—**Unskilled**—Is familiar with process, but is unable to perform job.
0—**No exposure**—No information or practice provided during training program.

Sample B

Yes—Can perform job with no additional training.
No—Is unable to perform job satisfactorily.

- Give and evaluate the posttest.
- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.
- Reteach and retest as required.

Resources Used in Developing This Unit

Print Media

- Houp, Kenneth W., Thomas E. Pearsall, and Elizabeth Tebeau. *Reporting Technical Information*, 9th ed. Englewood Cliffs, NJ: Prentice Hall, 1998.
- Licklider, Cheryl. *Graphic Arts: Orientation, Composition, and Paste-Up*. Stillwater, OK: Multistate Academic and Vocational Curriculum Consortium, Inc., 2000.
- *The Official Adobe Print Publishing Guide*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1998.

Suggested Activities

- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete*. Indianapolis: Hayden Books, 1996.
- Parker, Roger C. *Looking Good in Print*. 4th ed. Scottsdale, AZ: The Coriolis Group, 1998.
- Williams, Robin. *The Mac Is Not a Typewriter*. Berkeley, CA: Peachpit Press, 1990.
- Williams, Robin. *The Non-Designer's Type Book*. Berkeley, CA: Peachpit Press, 1998.
- Williams, Robin. *The PC Is Not a Typewriter*. Berkeley, CA: Peachpit Press, 1991.
- Williams, Robin, and Steve Cummings. *Jargon*. Berkeley, CA: Peachpit Press, 1993.

Suggested Supplemental Resources

Print Media

- *Before & After, How to Design Cool Stuff*—This is a print magazine that is published quarterly. In B&A you'll learn nearly every aspect of design, from typography to page layout, with a special emphasis on design as business communication. You'll learn how to design logos, brochures, and advertisements.

  For subscription information, contact:

  Before & After Magazine
  1830 Sierra Gardens Drive, #30
  Roseville, CA 95661
  Toll-free: 1-877-COOLSTF
  www.PageLab.com

- *Dynamic Graphics Magazine*—This magazine is dedicated to providing graphic arts professionals with practical advice, easy to follow instructions and creative techniques to save time and money on any project.

  For subscription information, contact:

  Dynamic Graphics, Inc.
  6000 N. Forest Park Dr.
  Peoria, IL 61614-3592
  www.dgusa.com

- *Communication Arts*—This magazine is the place to go for design inspiration. Within this magazine you will find design issue columns, freelance columns, technology resources, legal affair columns as well as book reviews, Web resources, and production resources.

  For subscription information, contact:

  Communication Arts
  P.O. Box 10300
  Palo Alto, CA 94303
  Tel: 650-326-6040
  www.commarts.com

- Harper, Talitha, ed. and Sara Booth, ed. *Step-By-Step Electronic Design Techniques.* Berkeley, CA: Peachpit Press, 1997.—This book contains an exclusive collection of hundreds of outstanding electronic design and illustration projects, all from the issues of Step-By-Step Electronic Design newsletter.

  Available from:

  Peachpit Press
  2414 Sixth Street
  Berkeley, CA 94710
  Toll-free: 1-800-283-9444
  www.peachpit.com

Electronic Media

- http://desktopPublishing.com/design.html—This Web site contains graphic design links of interest to graphic artists and designers.

- www.design-tools.com—*Design Tools Monthly* is a newsletter that summarizes important stories from trade magazines for Macintosh-based graphic designers. This Web site contains information on how to subscribe to the newsletter as well as a free sample issue to download.

- http://graphicdesign.miningco.com/arts/graphicdesign/mlibrary.htm—This site contains real world tips and tricks on advertising, brochure, general, logo, and newsletter design. It also explains "contrast" and suggests ways to apply contrast to your designs. You can find links to graphic design books, magazines, and ezines on this site.

- www.agfahome.com/publications—Agfa's Web site gives an overview of the books and CDs they publish about digital imaging, electronic prepress, digital photography, and printing.

Written Test

Name ____________________

Date ____________________ Score __________

Objective 1

Match the terms with their definitions.

1. Body type
2. Display type
3. Grid
4. Live area
5. Optical center

____ a. Area of document page where type and graphics appear

____ b. Nonprinting guidelines used to help you lay out page-design elements consistently

____ c. Type 12 points in size or smaller

____ d. Point at which a reader's eye naturally rests when it first encounters a printed page

____ e. Type 14 points in size or larger

Objective 2

Discuss factors to consider when applying principles of document design. Write your answers on the blanks provided.

a. Purpose— ____________________

____

____

b. Coherence— ____________________

____

____

c. Proportion— ____________________

____

____

d. Direction— ____________________

____

____

e. Unity— ______________________

f. Discipline— ______________________

g. Contrast— ______________________

Objective 3

State definitions of types of design elements. Write your answers on the blanks provided.

a. Graphic treatments— ______________________

b. Text treatments— ______________________

Objective 4

Match types of graphic treatments with their definitions.

1. Borders
2. Columns
3. Margins
4. Rules

_____ a. Printed or visual lines used to define page outline

_____ b. White space between border and live area of document page

_____ c. Invisible lines created by placement and width of lines in text blocks

_____ d. Printed horizontal or vertical lines or boxes used to separate one part of a document from another

Objective 5

Match types of text treatments with their definitions.

1. Alignment
2. Captions
3. Footers
4. Headers
5. Headlines
6. Jumplines
7. Subheads
8. Symbols

_____ a. Information placed at bottom of document page

_____ b. Asterisks, bullets, and numbers used to organize ideas in lists

_____ c. Text accompanying graphics

_____ d. Information placed at top of document page

_____ e. Arrangement of text flush left, flush right, centered, or justified

_____ f. Display type over a story or article within a document

_____ g. Short headlines inside articles or stories within a document

_____ h. Information used to tell the reader when an article is continued from one page to another

Objective 6

Match types of graphic enhancements with their definitions.

1. Bleeds
2. Drop shadows
3. Electronic clip art
4. Screens
5. Spot color
6. Text wrap

_____ a. Dot patterns in graduated shades of gray

_____ b. Gray or black shading added to photos or graphics to give a three-dimensional effect

_____ c. Preproduced electronic artwork (pictures)

_____ d. Text with irregular line lengths used to indicate how a graphic relates to a particular section of text

_____ e. Color used at specific points to attract the reader's attention

_____ f. An element (text, graphic, photo, or background) that prints beyond the margins of the paper

Written Test

Objective 7

Arrange in order the following steps in the design process by placing the correct sequence numbers (1–6) in the appropriate blanks.

_____ a. Proof, edit, and revise computer-generated draft as necessary.

_____ b. Create thumbnail sketches.

_____ c. Print final copy.

_____ d. Define the project—its purpose and its audience.

_____ e. Create rough layout.

_____ f. Prepare computer-generated draft at actual size.

***Permission to duplicate this test is granted.**

Answers to Written Test

Objective 1

a. 4
b. 3
c. 1
d. 5
e. 2

Objective 2

a. Purpose—Determine the document's purpose and the relative importance of the information you want to communicate
b. Coherence—Strive for integration of the design elements you use so that the document's appearance is coherent with its purpose
c. Proportion—Determine size of all design elements in relation to their importance
d. Direction—Determine a logical directional pattern for reader's eye movement as he or she reads the document
e. Unity—Assemble the various design elements so that they fit together as a harmonious unit
f. Discipline—Apply design elements in moderation
g. Contrast—Decide whether the document's purpose dictates that its design maintain either high or low contrast

Objective 3

a. Graphic treatments—Design elements used to visually guide reader's eye from one point to another in document
b. Text treatments—Design elements used to organize text so that reader can locate information easily

Objective 4

a. 1
b. 3
c. 2
d. 4

Objective 5

a. 3
b. 8
c. 2
d. 4
e. 1
f. 5
g. 7
h. 6

Objective 6

a. 4
b. 2
c. 3
d. 6
e. 5
f. 1

Objective 7

a. 5
b. 2
c. 6
d. 1
e. 3
f. 4

Prerequisites:
None

Learning Activities Sheet

Student Name ______________________________

Place a checkmark in the appropriate box as you complete each of the steps below.

☐	1.	**Take**	Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.
☐	2.	**Read**	Objective Sheet.
☐	3.	**Study**	Information Sheet, Objectives 1 and 2, and Student Supplements 1 through 4.
☐	4.	**Do**	Assignment Sheet 1, "Evaluate the Design of a Magazine Ad."
☐	5.	**Stop**	Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 6. If the evaluation is not satisfactory, repeat steps 3 and 4.
☐	6.	**Study**	Information Sheet, Objectives 3 through 7, and Student Supplement 5.
☐	7.	**Observe**	Demonstration of procedures to be used in completing Job Sheet 1.
☐	8.	**Do**	Job Sheet 1, "Rescale Graphics."
☐	9.	**Stop**	Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 10. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 1 and repeat steps 7 and 8.
☐	10.	**Observe**	Demonstration of procedures to be used in completing Job Sheet 2.
☐	11.	**Do**	Job Sheet 2, "Create a Computer-Generated Grid."

Learning Activities Sheet

☐ 12. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 13. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 2 and repeat steps 10 and 11.

☐ 13. **Do** Assignment Sheet 2, "Design a Single-Page Flyer."

☐ 14. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 15. If the evaluation is not satisfactory, repeat steps 13 and 14.

☐ 15. **Observe** Demonstration of procedures to be used in completing Job Sheet 3.

☐ 16. **Do** Job Sheet 3, "Create a Single-Page Flyer."

☐ 17. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 18. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 3 and repeat steps 15 and 16.

☐ 18. **Study** Student Supplement 6, "Using Type and Screen Tints as Design Techniques to Create Contrast."

☐ 19. **Observe** Demonstration of procedures to be used in completing Job Sheet 4.

☐ 20. **Do** Job Sheet 4, "Add Contrast Using Special Effects Type and Screen Tints."

☐ 21. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 22. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 4 and repeat steps 18 through 20.

☐ 22. **Do** Assignment Sheet 3, "Examine Illustration Software Manual for Basic Operations."

Note: Refer to Unit 3, Objective 5 for information on the characteristics of quality illustration software.

☐ 23. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 24. If the evaluation is not satisfactory, repeat step 22.

☐ 24. **Observe** Demonstration of procedures to be used in completing Job Sheets 5 and 6.

☐ 25. **Do** Job Sheet 5, "Create a Logo Design" and Job Sheet 6, "Create Stationery Utilizing Logo Design."

☐ 26. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 5 and 6, continue to step 27.

☐ 27. **Observe** Demonstration of procedures to be used in completing Job Sheet 7.

☐ 28. **Do** Job Sheet 7, "Create a Spot Color Brochure."

☐ 29. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 30. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 7 and repeat steps 27 and 28.

☐ 30. **Check** With instructor for any additional assignments to be completed.

☐ 31. **Do** Additional assignments listed below.

____

____

____

☐ 32. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 33. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

***Permission to duplicate this form is granted.**

Unit Contents

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Student Page

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Suggested Activities

Instructional Plan

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.
- Make a transparency from the transparency master included in this unit. This appears in the teacher edition only.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.

Suggested Activities

- Discuss and demonstrate the job sheets. Make sure all required tools, equipment, and materials are available. Review with students the criteria for evaluation of these activities and the rating scale that will be used to indicate job performance.

Teaching Suggestions

- Prepare a display of scanned images including line art and continuous tone images.
- Demonstrate how to use the scanners located in the classroom.
- Demonstrate how to place documents on scanner glass to achieve best scanning results.
- Demonstrate to students how to access and use scanning software (Photoshop plug-in or independent scanning software) located in the classroom.
- Download or order software demo of Adobe Photoshop if not available within your lab. See "Suggested Supplemental Resources" section for more information.
- Have students review the user's manual for Adobe Photoshop or other image-editing software utilized in the classroom. If image-editing software other than Adobe Photoshop is used in the classroom, then some job sheets may need to be modified.
- Demonstrate how to use the various tools and filters in image-editing software.
- Have students review the user's manual for any scanning software utilized within the classroom.
- Collect samples of materials that contain moiré patterns and show samples to the class. Discuss how to avoid moiré patterns.
- The job sheets included in this unit are written for the Macintosh platform. You will need to modify these job sheets for students who will be using Windows-based computers.
- Demonstrate scanning procedures in image-editing software.
- Obtain a line art sample for students to use with Job Sheet 1.
- Obtain a black-and-white continuous tone photograph for students to use with Job Sheet 2.

- Obtain gray ramps, scan targets, or imagesetter test sheets for students to use with Job Sheet 5. These are available from local photographic supply stores, imagesetter manufacturers, printing device manufacturers, or contact Graphic Arts Technical Foundation (GATF), 200 Deer Run Road, Sewickley, PA 15143-2600, 412-741-6860, www.gatf.org.
- Obtain a continuous tone color photograph that includes a person as the subject for students to use with Job Sheet 6.
- Modify Job Sheet 10 for students whose computers are running an operating system other than Mac OS 8. The procedures vary based on the operating system.
- Provide students with a one-page text document to use with Job Sheet 12.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.
- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.
- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. See Answers to Assignment Sheets for correct answers where applicable. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.
- Evaluate the job sheets. When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in the student edition. Then observe the student performing the procedure.

  Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily completed the process step(s) for each checkpoint area. If the student is unable to complete the procedure correctly, have the student review the materials and try again.

  Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria that are provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

  Two sample performance evaluation keys have been provided on the next page. Many other keys are available. Select one rating (grading scale) that best fits your program needs.

Suggested Activities

Sample A

4—**Skilled**—Can perform job with no additional training.
3—**Moderately skilled**—Has performed job during training program; limited additional training may be required.
2—**Limited skill**—Has performed job during training program; additional training is required to develop skill.
1—**Unskilled**—Is familiar with process, but is unable to perform job.
0—**No exposure**—No information or practice provided during training program.

Sample B

Yes—Can perform job with no additional training.
No—Is unable to perform job satisfactorily.

- Give and evaluate the posttest.
- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.
- Reteach and retest as required.

Resources Used in Developing This Unit

Print Media

- *Adobe Photoshop 5.0 User Guide*. San Jose, CA: Adobe Systems Incorporated, 1998.
- Beale, Stephen, and James Cavuoto. *The Scanner Book*. Torrance, CA: Micro Publishing Press, 1989.
- Blatner, David, Glenn Fleishman, and Steve Roth. *Real World Scanning and Halftones*, 2d ed. Berkeley, CA: Peachpit Press, 1998.
- Cohen, Sandee, and Robin Williams. *The Non-Designer's Scan and Print Book*. Berkeley, CA: Peachpit Press, 1999.
- Conner, Floyd, Roger Gilcrest, Peter Karlen, Jean Perwin, and David Spatt. *The Artist's Friendly Legal Guide*. Cincinnati, OH: North Light Books, 1988.
- McAllister, Robin. *Pathways to Print: The Complete Series for Desktop Publishing*. Albany, NY: Delmar Publishers, 1997.
- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete*. Indianapolis: Hayden Books, 1996.
- Williams, Robin, and Steve Cummings. *Jargon*. Berkeley, CA: Peachpit Press, 1993.

Suggested Supplemental Resources

Print Media

For information concerning the following books, go to www.adobe.com.

- *Adobe Photoshop 5.5 Classroom in a Book*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1999.
- *The Official Adobe Electronic Publishing Guide*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1999.
- *The Official Adobe Print Publishing Guide*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1998.

For information concerning the following books, contact:

Peachpit Press
2414 Sixth Street
Berkeley, CA 94710
Toll-free: 800-283-9444
www.peachpit.com

- Dayton, Linnea, and Jack Davis. *The Photoshop 5/5.5 Wow! Book*. Berkeley, CA: Peachpit Press, 1999.
- Farace, Joe. *The Photographer's Digital Studio*. Berkeley, CA: Peachpit Press, 1998.
- Weinmann, Elaine, and Peter Lourekas. *Photoshop 5 for Windows and Macintosh: Visual QuickStart Guide*. Berkeley, CA: Peachpit Press, 1998.

The following books are available at bookstores or www.amazon.com.

- Murray, James D., William vanRyper, and Deborah Russell. *Encyclopedia of Graphics File Formats*. O'Reilly & Associates, Inc., 1996.—This text is an incredible and exhaustive reference for anyone who works with many formats in many programs.
- Sullivan, Michael. *Make Your Scanner a Great Design & Production Tool*. Cincinnati, OH: North Light Book, 1998.—This book provides detailed color how-to's, step-by-steps, and comparisons.

Suggested Activities

Electronic Media

- Software Downloads
  - Adobe Systems Incorporated
    345 Park Avenue
    San Jose, CA 95110-2704
    Tel: 408-536-6000
    To download free demos of Adobe image-editing software go to www.adobe.com
    To request a demo CD by mail, call 1-800-685-3587
- Videos
  - *Scanning and Halftones*—This video covers black ink prints, traditional halftones, digital halftones, line screen, dither repairs, and halftone density.

    Available from:

    MacAcademy/Windows Academy
    100 East Granada Boulevard
    Ormond Beach, FL 32176
    Toll-free: 1-800-527-1914
    www.mac.academy.com
  - *Desktop-to-Print Series II*—This video series contains 7 videos consisting of 15 modules. These videos outline real world problems and solutions that students will encounter when joining the workforce. The following videos directly relate to scanning:
    - Tape 3, Module 5—*What You Have to Know About PPI, Line Screen, and DPI to Create High Quality Digital Halftones*
    - Tape 3, Module 6—*Why You Need to Consider Levels of Gray and Dot Gain to Create Halftones and Blends*
    - Tape 4, Module 7—*How Images are Scanned for Professional Output*
    - Tape 4, Module 8—*Tips for Manipulating Scanned Images That Will Print Properly*

    Available from:

    Montage Productions, Inc.
    1085 Tunnel Road #2
    Asheville, NC 28805
    Sales Office: 800-366-3714
    www.montagepro.com

- Internet Resources
  - www.rwsh.com/links.html—Real World Scanning and Halftone
    This Web site contains links to the following scanning resources: general scanning, artistic halftoning and dithering, scanners, scanner hardware, resolution, sensors, digital cameras, compression, file formats, Photo CD, and screening.
  - www.scantips.com—Scanning Tips
    The purpose of this Web site is to offer some scanning tips and hints and help with fundamentals and other basic scanning information to help you get the most from your scanner.
  - http://www.loc.gov/copyright/—United States Copyright Office
    This Web site contains the following information related to copyrights: general information on copyright basics, legislation, publications, links, registration, etc.

Answers to Assignment Sheets

Assignment Sheet 1

Research Copyright Law in Relation to Scanned Materials

1. The publication will state if the purchaser is authorized to use the individual items to produce copyright-free art for the printing of advertisements, newsletters and the like. This information will be included in the copyright notice.

2. Just because you pay a photographer to take a picture and make prints does not give you permission to reproduce that photograph. You must return to the photographer for additional prints unless you commissioned the photographer and have a written agreement stating that your company may reproduce these for advertisement purposes.

3. You may write the photographer or publisher and request permission to use the image. If your publication is not for profit and is distributed to a limited audience, you will probably have no problems obtaining permission. Many publishers will happily give you permission to reprint images, as long as you give them proper credit.

4. Never scan U.S. currency or postage stamps or you could end up in jail. The U.S. government protects itself using criminal statutes that penalize forgery and tampering with U.S. currency. Diplomas, certifications, board licenses, and other documents of this nature should never be scanned or reproduced.

Assignment Sheet 2

Examine Scanning Hardware and Software Available in Your Classroom

Answers will vary depending on hardware and software available in classrooms.

Assignment Sheet 3

Identify Scanner and Scan Settings

Project 1—Flatbed scanner; 170 resolution; grayscale
Project 2—Flatbed or drum scanner; 300 resolution; RGB or color
Project 3—Flatbed scanner; 600 or higher resolution; line art or bitmap
Project 4—Flatbed scanner; 266 resolution; grayscale
Project 5—Drum scanner; 400 resolution; RGB or color
Project 6—Flatbed scanner; 600 or higher resolution; line art
Project 7—Flatbed scanner; 600 or higher resolution; line art

Assignment Sheet 4

Examine Image-Editing Software Manual for Basic Operations

Answers will vary depending on image-editing software available in classrooms.

Written Test

Name ______________________________

Date ______________________________ Score __________

Objective 1

Match the terms with their definitions. Definitions continue on the next page.

1. Binary
2. Bitmap
3. Dithering
4. Gamma
5. Halftone
6. Lossy compression
7. Pixel
8. Pixelation
9. Posterization
10. Raster image
11. Resolution
12. Scanner
13. Screen
14. Stochastic screening
15. Vector graphic
16. Virtual memory

_____ a. Free space on a computer's hard disk to be used when adequate RAM memory is not available to work with large images or files

_____ b. A measure of the contrast that affects the mid-level grays (midtones); can be adjusted without significantly affecting the shadows and highlights in an image

_____ c. Image that has been scanned, taken with a digital camera, or created in an image-editing program

_____ d. Method used in graphics applications of mixing different sizes and colors (or gray tones) of pixels on the screen that trick your eye into thinking you see a totally new color

_____ e. Image made up of independent lines, shapes, or objects that are each defined by mathematical formulas

_____ f. Method for working with numbers based on only two digits: 1 and 0, each of which means either "on" or "off"

_____ g. A photographic effect in which the number of gray levels in an image is reduced to achieve a poster-like effect

_____ h. Screened images that have very small dots of the same or varying sizes and varying distances between dots, corresponding to the tone values independent of screen angles and screen ruling; avoids creating moiré patterns by randomly arranging the placement of dots

_____ i. A digitizing device that converts art or photos into an electronic bitmap form

____ j. An image composed of tiny individual dots called pixels

____ k. Refers to condition where each pixel in an image becomes visible because of a low resolution image

____ l. Pattern used as the line screen when printing a grayscale image

____ m. JPEG compression software that selects details that are important to the image and discards the rest

____ n. The density of dots or pixels on a page or monitor usually measured in dots per inch (dpi)

____ o. Pattern of dots used to make a halftone or tint, measured in percentages, with 10-percent being very light and 100-percent being totally black

____ p. Hundreds of thousands of spots of light that compose a computer monitor

Objective 2

Match types of scanners with their descriptions.

1. Drum scanner
2. Flatbed scanner
3. Handheld scanner
4. Sheetfed scanner
5. Slide scanner

____ a. Uses a roller mechanism to pull a sheet of paper over a stationary optical device and reads the image for use on the computer; should not be used for print production

____ b. Uses extremely high resolutions to provide enough detail so the image can be enlarged to fill a full page without causing pixelation

____ c. Used by holding scanner in your hand and dragging it across an image; scans are not of sufficient quality for professional-level printing and publishing

____ d. Most common type of desktop scanner; used to scan paper images as well as small objects such as keys, pencils, fabric swatches, etc.

____ e. An image is wrapped around a transparent cylinder which rotates as the light is focused on the image during scanning; highest quality and most expensive scanner; reserved for only the most high-end work

Written Test

Objective 3

Select true statements concerning the common features of flatbed scanners by placing an "X" next to the true statements.

_____ a. Optical resolution refers to how much color information the scanner can capture.

_____ b. The first number of the optical resolution is the number of pixels per inch of information the scanner captures in the horizontal direction.

_____ c. The second number of the optical resolution refers to the number of steps the scanner head moves along the vertical direction.

_____ d. Interpolated resolution is much lower than the optical resolution.

_____ e. CCDs are small sensors in the scanner that compare the electrical charge of the light before and after it hits the copy and stores the data.

_____ f. 24-bit scanners capture RGB images.

_____ g. 1-bit scanners capture higher quality graphics.

_____ h. Dynamic range refers to a scale of relative darkness.

_____ i. The speed of a flatbed scanner refers to how fast a scanner previews and processes scans.

Objective 4

Match the types of scanning software with their descriptions.

1. Image-editing software
2. OCR software
3. Scanner software

_____ a. A standalone program packaged with scanners that is used to control the scanner

_____ b. Software used to edit or change a photographic image

_____ c. Software used to scan text into a computer not as a graphic, but actually as letters, words, and sentences using pattern matching and feature extraction

Written Test

Objective 5

Match file formats for scanned images with their descriptions.

1. BMP
2. DCS
3. EPS
4. JPEG
5. PDF
6. PICT
7. TIFF

____ a. Used generally as a vector format, but sometimes used as a raster format

____ b. Used primarily to create images for the Windows monitor

____ c. Lossy compression format that reduces the file size of an image; used primarily for photographic images

____ d. Compression scheme that embeds all the necessary information to view a single document or an entire publication

____ e. Variation of the EPS format that creates five separate files that must accompany the page-layout document for film separations to be output

____ f. Created for images on the first Macintosh system; can contain both vector and raster information

____ g. Raster file format that is extremely flexible; best format for files that will be transferred between Windows and Macintosh platforms

Objective 6

Match PPI, DPI, and LPI with their descriptions.

1. DPI
2. LPI
3. PPI

____ a. Measurement of the resolution at which an output device, such as an imagesetter or printer, displays text and graphics

____ b. Measurement of input resolution

____ c. Measurement of the screen frequency or resolution of a halftone image

Objective 7

Complete statements concerning factors that determine scanning resolution by circling the correct answers.

a. The key to determining the correct resolution for scanning is knowing the target **(input, output)** resolution or the line screen required for the final reproduction process.

b. The formula for scanning grayscale and color images is:

Line screen for target output x **(2, 3)** = Input resolution

c. The formula for scanning continuous tone images when scanned image is to be enlarged is: [**(LPI, PPI)** x 2] x Enlargement = Scanned image size

d. The resolution used to scan **(grayscale, line art)** varies depending on the thickness of the lines and the amount of detail the art contains.

Objective 8

Select true statements concerning scanning resolutions and scanner settings by placing an "X" next to the true statements.

_____ a. Line art is typically scanned at 600 lpi.

_____ b. Grayscale photographic images are typically scanned on drum scanners.

_____ c. The formula for determining the scanning resolution for color photographic images is 2 x lpi.

_____ d. The line screen for newsprint is normally 85–120 lpi.

_____ e. Newsprint magazines should normally be scanned at 200–240 resolution.

_____ f. Museum-quality art books typically have a line screen of 65–85 lpi.

_____ g. Coated stock printed on a web press will normally have a dot gain of 15–25%.

_____ h. Uncoated stock printed on a sheetfed press will normally have a dot gain of 10–15%.

Objective 9

Distinguish among when to scan images as grayscale, line art, and RGB by placing a "G" next to descriptions of scanning as grayscale, an "L" next to descriptions of scanning as line art, and "RGB" next to description(s) of scanning as RGB.

_____ a. Scan illustrations with various shades of gray such as pencil or charcoal drawings.

_____ b. Scan signatures.

_____ c. Scan color photos that will be reproduced in black and white.

_____ d. Scan any drawings that have smooth edges.

_____ e. Scan black-and-white photographs.

_____ f. Scan any color photograph or artwork that will be displayed on the computer or reproduced in CMYK color for print production.

Written Test

Objective 10

Complete statements concerning converting RGB scanned images to CMYK for print by filling in the blanks with the correct answers.

a. All images when scanned in ____________________ are in RGB mode.

b. When printing images in process colors, convert images to ____________ then place them into a page-layout or illustration application to prepare them for printing.

c. Some effects and filters in image-editing programs are only available in the ________________ mode.

d. Converting between RGB and CMYK modes causes some ____________ of information.

e. Because of these factors, make the conversion process the __________ thing you do before saving your image for printing.

Objective 11

Select true statements concerning moiré patterns and how to avoid them by placing an "X" next to the true statements.

_____ a. A moiré pattern is an unwanted grid-like pattern that usually occurs when a printed image is scanned and produced for the first time.

_____ b. Always scan an image that was already printed on paper.

_____ c. When the descreen feature is applied to a scanned image, it can minimize the printed screen thus reducing the moiré pattern.

_____ d. Graphics software sets the correct screen angles for color separations to avoid creating moiré patterns.

Objective 12

List the scanning guidelines.

a. ____

b. ____

c. ____

d. ____

Written Test

Objective 13

Match the common features of image-editing software with their descriptions.

1. Brightness/ Contrast
2. Color balance
3. Curves
4. Equalize
5. Histogram
6. Hue/Saturation
7. Invert
8. Levels
9. Posterize
10. Threshold
11. Unsharp mask

_____ a. Command that converts grayscale or color images to high-contrast, black-and-white images

_____ b. Command that changes the mixture of colors in a color image, providing generalized color correction

_____ c. Command that makes a positive black-and-white image negative

_____ d. Filter used to correct blurring that occurs during photographing, scanning, resampling, or printing an image

_____ e. Command that offers the least amount of control over the tonal range of an image because the adjustment affects the entire image

_____ f. Command used to adjust and enhance the hue, saturation, and brightness of individual color components in an image

_____ g. Graph in Adobe Photoshop that shows how the pixels' values are distributed in an image and whether the image contains enough detail in the shadows, the midtones, and the highlights to produce a good correction

_____ h. Command that provides the most sophisticated controls of the tonal adjustment tools

_____ i. Command used to control the tonal balance of an image by setting the lightest and darkest point in the image, affecting the entire image, a selection, or a specific channel within an image

_____ j. Command that redistributes the brightness values of the pixels in an image so that they more evenly represent the entire range of brightness levels

_____ k. Command that indicates the number of tonal levels (or brightness values) for each channel in an image and then maps pixels to the closest matching level

***Permission to duplicate this test is granted.**

Answers to Written Test

Objective 1

a. 16
b. 4
c. 10
d. 3
e. 15
f. 1
g. 9
h. 14
i. 12
j. 2
k. 8
l. 5
m. 6
n. 11
o. 13
p. 7

Objective 2

a. 4
b. 5
c. 3
d. 2
e. 1

Objective 3

b, c, e, f, h, i

Objective 4

a. 3
b. 1
c. 2

Objective 5

a. 3
b. 1
c. 4
d. 5
e. 2
f. 6
g. 7

Objective 6

a. 1
b. 3
c. 2

Objective 7

a. Output
b. 2
c. LPI
d. Line art

Objective 8

a, c, d, e, g

Objective 9

a. G
b. L
c. G
d. L
e. G
f. RGB

Objective 10

a. Color
b. CMYK
c. RGB
d. Loss
e. Last

Answers to Written Test

Objective 11

c, d

Objective 12

Answers may be in any order.

a. Clean the glass.
b. Handle art carefully.
c. Straighten image.
d. Avoid bumps and vibrations.

Objective 13

a. 10
b. 2
c. 7
d. 11
e. 1
f. 6
g. 5
h. 3
i. 8
j. 4
k. 9

Prerequisites:
None

Learning Activities Sheet

Student Name ____________________

Place a checkmark in the appropriate box as you complete each of the steps below.

☐ 1. **Take** Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 2. **Read** Objective Sheet.

☐ 3. **Study** Information Sheet, Objective 1.

☐ 4. **Do** Assignment Sheet 1, "Research Copyright Law in Relation to Scanned Materials."

☐ 5. **Research** Online resources regarding copyright law. Visit the U.S. Copyright Office at http://www.loc.gov/copyright/ as one of your sources.

☐ 6. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 7. If the evaluation is not satisfactory, repeat step 4.

Optional

☐ 7. **View** Videotape entitled *Scanning and Halftones*.

☐ 8. **Study** Information Sheet, Objectives 2 through 4.

☐ 9. **Do** Assignment Sheet 2, "Examine Scanning Hardware and Software Available in Your Classroom."

☐ 10. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 11. If the evaluation is not satisfactory, repeat steps 8 and 9.

☐ 11. **Study** Information Sheet, Objectives 5 and 6.

Optional

☐ 12. **View** Videotape entitled *What You Have to Know About PPI, Line Screen, and DPI to Create High Quality Digital Halftones.*

Learning Activities Sheet

☐ 13. **Study** Information Sheet, Objectives 7 through 9.

Optional

☐ 14. **View** Videotape entitled *Why You Need to Consider Levels of Gray and Dot Gain to Create Halftones and Blends.*

☐ 15. **Do** Assignment Sheet 3, "Identify Scanner and Scan Settings."

☐ 16. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 17. If the evaluation is not satisfactory, repeat steps 13 and 15.

☐ 17. **Study** Information Sheet, Objectives 10 through 12.

Optional

☐ 18. **View** Videotape entitled *How Images are Scanned for Professional Output.*

☐ 19. **Observe** Demonstration of procedures to be used in completing Job Sheet 1 and Job Sheet 2.

☐ 20. **Do** Job Sheet 1, "Scan Line Art" and Job Sheet 2, "Scan a Continuous Tone Image."

☐ 21. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 1 and 2, continue to step 22.

☐ 22. **Study** Information Sheet, Objective 13.

☐ 23. **Do** Assignment Sheet 4, "Examine Image-Editing Software Manual for Basic Operations."

☐ 24. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 25. If the evaluation is not satisfactory, repeat steps 22 and 23.

☐ 25. **Observe** Demonstration of procedures to be used in completing Job Sheet 3 and Job Sheet 4.

☐ 26. **Do** Job Sheet 3, "Use Image-Editing Software to Touch Up and Prepare Line Art Scan for Print" and Job Sheet 4, "Use Image-Editing Software to Touch Up and Prepare Continuous Tone Scan for Print."

☐ 27. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 3 and 4, continue to step 28.

Optional

☐ 28. **View** Videotape entitled *Tips for Manipulating Scanned Images That Will Print Properly.*

☐ 29. **Observe** Demonstration of procedures to be used in completing Job Sheet 5.

☐ 30. **Do** Job Sheet 5, "Calibrate and Assess a Desktop Scanner."

☐ 31. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 32. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 5 and repeat steps 29 and 30.

☐ 32. **Observe** Demonstration of procedures to be used in completing Job Sheet 6 and Job Sheet 7.

☐ 33. **Do** Job Sheet 6, "Scan a Continuous Tone Color Original" and Job Sheet 7, "Convert a Continuous Tone Color Scan to Grayscale."

☐ 34. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 6 and 7, continue to step 35.

☐ 35. **Observe** Demonstration of procedures to be used in completing Job Sheet 8 and Job Sheet 9.

Learning Activities Sheet

☐ 36. **Do** Job Sheet 8, "Perform Basic Color Correction" and Job Sheet 9, "Use Image-Editing Software to Perform Basic Image Cloning."

☐ 37. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 8 and 9, continue to step 38.

☐ 38. **Observe** Demonstration of procedures to be used in completing Job Sheet 10.

☐ 39. **Do** Job Sheet 10, "Calibrate a Color Monitor."

☐ 40. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 41. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 10 and repeat steps 38 and 39.

☐ 41. **Observe** Demonstration of procedures to be used in completing Job Sheet 11.

☐ 42. **Do** Job Sheet 11, "Place Scanned Graphics/Photos in Page-Layout Document."

☐ 43. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 44. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 11 and repeat steps 41 and 42.

☐ 44. **Observe** Demonstration of procedures to be used in completing Job Sheet 12.

☐ 45. **Do** Job Sheet 12, "Scan Text Using OCR Software."

☐ 46. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 47. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 12 and repeat steps 44 and 45.

☐ 47. **Check** With instructor for any additional assignments to be completed.

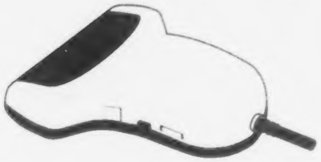
☐ 48. **Do** Additional assignments listed below.

☐ 49. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

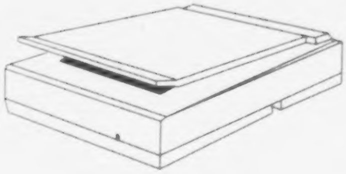
☐ 50. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

*Permission to duplicate this form is granted.

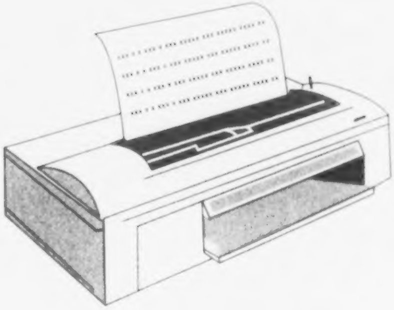
Types of Scanners



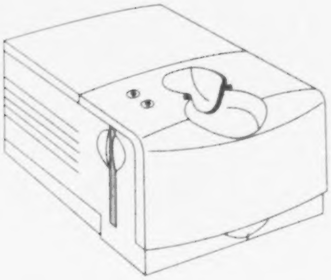
Handheld



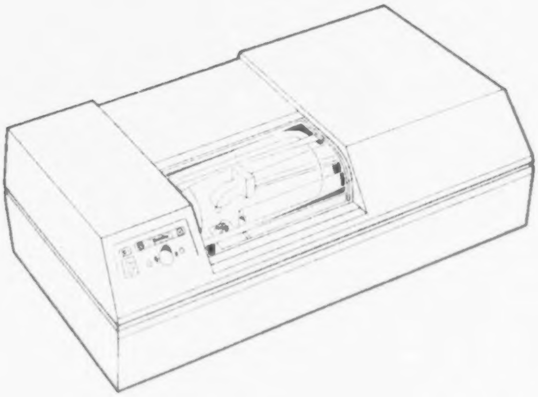
Flatbed



Sheetfed



Slide



Drum

Unit 7

Layout and Document Preparation

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Suggested Activities

Instructional Plan

Preparation

- Read the unit carefully and plan for instruction.
- Review "Teaching Suggestions." Plan for classroom activities.
- Plan your presentation to take advantage of student learning styles and to accommodate special-needs students.
- Prepare classroom. Put up posters and charts and display articles and other references related to this unit.
- Obtain films, videotapes, and other resources to supplement instruction of this unit. See "Resources Used in Developing This Unit" and "Suggested Supplemental Resources" for more information.
- For self-paced instruction, review Learning Activities Sheet. Modify as appropriate to include additional activities and/or resources available in your classroom. Make one copy for each student.

Delivery and Application

Unit Introduction (self-paced instruction)

- Provide student with Learning Activities Sheet and unit of instruction.
- Review unit contents with student.
- Have the student complete the steps in the learning activities sheet.

Unit Introduction (group instruction)

- Provide students with unit of instruction.
- Discuss unit and specific objectives.
- Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit. Reinforce basic academic and workplace skills when applicable.
- Discuss the assignment sheets. Review with students the criteria for evaluation of these activities.
- Discuss and demonstrate the job sheets. Make sure all required tools, equipment, and materials are available. Review with students the criteria for evaluation of these activities and the rating scale that will be used to indicate job performance.

Suggested Activities

Teaching Suggestions

- Demonstrate methods of editing text and graphics.
- Prepare a display of newsletters and multi-page documents.
- Demonstrate rearranging pages using the Document Layout palette in QuarkXPress or Adobe PageMaker.
- Display samples of laser proofs, revised proofs, bluelines, color proofs, press proofs, and digital proofs. Have students compare the various types of proofs when discussing Objective 11.
- Collect samples of electronic filesheets from various print shops and service bureaus for students to compare.
- Download or order software demo of StuffIt if not available on-site. See "Suggested Supplemental Resources" section for more information.
- Demonstrate the use of a bulletin board service, online service provider, and e-mail if available.
- Review the information sheet in Unit 5, "Document Design." These pages will be used in this unit in association with Assignment Sheet 3 and Job Sheet 3.
- Provide students with a hard copy of an eight-page document for use with Job Sheet 5.
- Demonstrate how to create a paper dummy for determining imposition printing of two-page spreads in booklets and newsletters.
- Provide students with copies of completed document utilizing all software and required steps in the electronic prepress process for use with Job Sheet 9.
- Demonstrate how to output film negatives/separations.
- When discussing Objectives 21 and 22, try to recreate various PostScript errors and have students troubleshoot these errors.
- Provide students with floppy disks for use with Job Sheet 11.
- Job Sheet 11 may need to be modified if a file compression software other than StuffIt is used in the classroom.
- Job Sheet 12 may need to be modified if a telecommunications software other than AOL is used in the classroom.
- Demonstrate how to calibrate the imagesetter located on-site.
- Demonstrate how to output film from film processor and imagesetter located in the classroom and then allow the students to output the film before having students complete Job Sheet 16.

Evaluation

- Make copies of the written test. Add or modify test items as needed. The written test serves as both a pretest and posttest to assist in measuring each student's competency gains.

- Give and evaluate pretest. Modify lesson plan to include additional instruction for those areas where students were deficient.

- Evaluate the assignment sheets. Rate the student using the criteria listed on each assignment sheet. See Answers to Assignment Sheets for correct answers where applicable. If the student's performance is unacceptable, have the student review the appropriate materials and complete the assignment again.

- Evaluate the job sheets. When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in the student edition. Then observe the student performing the procedure.

  Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily completed the process step(s) for each checkpoint area. If the student is unable to complete the procedure correctly, have the student review the materials and try again.

  Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria that are provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

  Two sample performance evaluation keys have been provided below. Many other keys are available. Select one rating (grading scale) that best fits your program needs.

  Sample A

  4—**Skilled**—Can perform job with no additional training.
  3—**Moderately skilled**—Has performed job during training program; limited additional training may be required.
  2—**Limited skill**—Has performed job during training program; additional training is required to develop skill.
  1—**Unskilled**—Is familiar with process, but is unable to perform job.
  0—**No exposure**—No information or practice provided during training program.

  Sample B

  Yes—Can perform job with no additional training.
  No—Is unable to perform job satisfactorily.

- Give and evaluate the posttest.

Suggested Activities

- Meet individually with students to evaluate their progress through this unit of instruction and indicate to them possible areas of improvement.
- Reteach and retest as required.

Resources Used in Developing This Unit

Print Media

- Cohen, Sandee, and Robin Williams. *The Non-Designer's Scan and Print Book*. Berkeley, CA: Peachpit Press, 1999.
- *Computer Ready Electronic Files*. Nashville, TN: Scitex Graphic Arts Users Association, 1995.
- *How to Create Adobe PDF Files for Print and Press*. Seattle: Adobe Systems Incorporated, 1999.
- *The Official Adobe Print Publishing Guide*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1998.
- O'Quinn, Donnie, Matt Leclair, Steve Kurth, and Tim Plumer. *Digital Prepress Complete*. Indianapolis: Hayden Books, 1996.
- Williams, Robin, and Steve Cummings. *Jargon*. Berkeley, CA: Peachpit Press, 1993.

Suggested Supplemental Resources

Print Media

For more information about the following books, go to www.adobe.com.

- *Adobe Acrobat 4.0 Classroom in a Book*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1999.—This text contains step-by-step projects outlining Acrobat's various features. Each lesson ends with review questions and answers, and a few also have suggestions for exploring the subject further, on your own.
- *The Official Adobe Electronic Publishing Guide*. Indianapolis: Adobe Press/Macmillan Computer Publishing, 1999.—Experts and leaders in the field of electronic publishing give tips and pointers on transporting, manipulating, and distributing images and documents electronically.

Electronic Media

- Videos
  - *Layouts and Output*—This video covers file management, font overview, font management, layout and design, assembly process, output preparation, preflight options, and troubleshooting.

    Available from:

    MacAcademy/Windows Academy
    100 East Granada Boulevard
    Ormond Beach, FL 32176
    Toll-free: 1-800-527-1914
    www.mac.academy.com

  - *Desktop-to-Print Series II*—This video series contains 7 videos consisting of 15 modules. These videos outline real world problems and solutions that students will encounter when joining the workforce.
    - Tape 6, Module 11—*Designing Documents to Avoid Production Problems*
    - Tape 6, Module 12—*Useful Electronic Design Tips to Ensure the Smooth Processing of Your Document*
    - Tape 6, Module 13—*To Trap or Not to Trap...And Other Important Prepress Considerations*
    - Tape 7, Module 14—*File Preparation and Proofing Steps Designers Can Use to Avoid Problems in Production*

    Available from:

    Montage Productions, Inc.
    1085 Tunnel Road #2
    Asheville, NC 28805
    Sales Office: 800-366-3714
    www.montagepro.com

Answers to Assignment Sheets

Assignment Sheet 1

Proofread a Document

The multi-faceted face of electronic prepress offer many opportunities to indivduals who may wish to broader their skills in the business world. Electronic prepress skills are beneficail in jobs requiring simple black-and-white reproductions to elaborate, colorful multi-page magazines. An experienced electronic prepress(EPP) operator can comfortably work with simple page-layout software and even perform basic prrcedures in more difficult software Many of the procedures in EPP are similar, even though the terminology may differ from one software to another.

Although the business community has been slow to financially reward the efforts necessary to achieve EPP skills, EPP operators must continue to work toward financial recognition. EPP operators must make management personnel aware that electronic prepress involves more than clerical skills. Often an

EPP operator perform the functions of designer, typist, editor, proofreader, and artist. Proficiency in these areas takes dedicated effort as well as knowlegde.

Assignment Sheet 2

Determine Specifications for a Newsletter

Evaluated to the satisfaction of the instructor.

Assignment Sheet 3

Determine Specifications for a Multi-Page Document

Evaluated to the satisfaction of the instructor.

Written Test

Name ______________________________

Date ______________________ Score __________

Objective 1

Match the terms with their definitions.

1. Abstract
2. Advance story
3. Backup utility
4. Delete
5. Densitometer
6. Feature story
7. File conversion
8. Follow-up story
9. Oversized document
10. Proofreading
11. Specialty columns
12. Stacking
13. Troubleshooting

_____ a. Article presenting new information on a story published earlier

_____ b. Regularly presented brief articles about particular topics

_____ c. Reading a document to check for errors in type and graphics

_____ d. Device used to measure the density of light transmitted or reflected by paper or film

_____ e. Brief summary of document contents

_____ f. Identifying the source of computer/software operating errors and eliminating their cause

_____ g. Software that can create an automatic backup of everything on every computer on a network

_____ h. Translating files from one software application format to another, usually between computer platforms

_____ i. Article presenting information on an upcoming event

_____ j. Overlapping text blocks and graphics

_____ k. To take out

_____ l. Document with pages larger than paper size available for printer

_____ m. Article presenting information on a special event, activity, or other topic of interest

Written Test

Objective 2

Describe the typical steps in an EPP layout process. Write your answers on the blanks provided.

____

____

____

____

____

____

Objective 3

List four methods of editing text.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

Objective 4

Select from the following list methods of editing graphics by placing an "X" on the blank before each correct method.

_____ a. Crop graphic images

_____ b. Change column width

_____ c. Scale or resize graphic images

_____ d. Wrap text around graphic

_____ e. Change leading

_____ f. Change density of shading

_____ g. Change line thickness

Objective 5

Select true statements concerning stacking text and graphics by placing an "X" next to the true statements.

_____ a. Text blocks and graphics are individual layers in publication window.

_____ b. Individual layers may be stacked.

_____ c. Text blocks may be solid, transparent, or opaque layers.

_____ d. Graphics may be solid, transparent, or shaded layers.

_____ e. Changing a layer's stacking order may affect its appearance.

_____ f. Generally, the most recently selected item is the bottom layer.

Objective 6

Match document-size commands with their effect on printer production.

1. Enlarge
2. Original (100%)
3. Reduce
4. Thumbnail
5. Tile

_____ a. Printer produces document at actual size

_____ b. Printer produces small units of one oversized-document page on several separate sheets of paper that then must be physically pasted together to create entire page

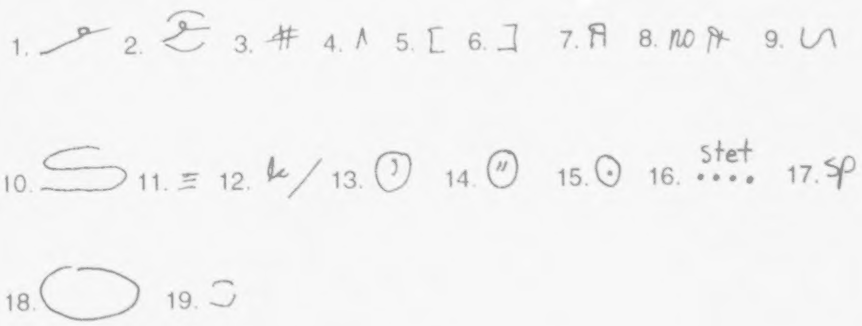
_____ c. Printer produces document at specified increments larger than actual size

_____ d. Printer produces document at specified increments smaller than actual size

_____ e. Printer produces miniature copies of several document pages on a single sheet of paper

Objective 7

Match standard proofreaders' marks with their definitions. Definitions continue on the next page.



_____ a. Insert word, letter, numeral, etc.

_____ b. Do not make correction indicated; leave as originally typed

_____ c. Delete

_____ d. Move left

______ e. Move right

______ f. Delete and close up

______ g. Transpose letters, word, etc.

______ h. Close up space

______ i. Make new paragraph

______ j. Insert space

______ k. Change to uppercase letter

______ l. Change to lowercase letter

______ m. Insert apostrophe or comma

______ n. Insert quotes

______ o. Insert period

______ p. Spell out

______ q. Do not type; instructions to typist

______ r. Do not make a new paragraph

______ s. Transpose lines

Objective 8

Arrange in order the steps in proofreading documents by placing the correct sequence numbers (1–5) in the appropriate blanks.

______ a. Read text blocks for content to assure text has not been omitted.

______ b. Proofread graphics.

______ c. Have document proofread by another person.

______ d. Proofread text blocks for typographical errors.

______ e. Scan headlines and subheads for typographical errors.

Objective 9

Match the elements of a newsletter with their purposes. Purposes continue on the next page.

1. Alley
2. Articles
3. Byline
4. Caption
5. Deck
6. Filler
7. Footers
8. Graphics
9. Gutter
10. Header
11. Headlines
12. Indicia
13. Jumpline
14. Kicker
15. Logo
16. Mailing area
17. Masthead
18. Nameplate
19. Pull quote
20. Sidebar
21. Subhead
22. Table of contents

_____ a. Presents story, cartoon, or clip art used to fill an area short on copy

_____ b. Present feature, follow-up, and advance stories and specialty columns

_____ c. Provides blank space between inner edge of two pages where fold or binding exists

_____ d. Lists publisher, publisher's address, editorial staff, subscription rate, copyright notice, and ISSN (if applicable)

_____ e. Describes a photo, illustration, or chart

_____ f. Provides graphic image that represents an organization, company, or item

_____ g. Identifies publication name with accompanying graphics such as a company logo, subtitle or motto, publisher, date, and volume number

_____ h. Provides white space between two columns

_____ i. Lists page numbers of the articles to encourage readers to explore the publication contents

_____ j. Provides a postal permit imprint used in place of a postage stamp

_____ k. Breaks up long articles and allows reader to skim article content

_____ l. Identifies author; usually placed at the beginning of an article if it is short or at the end of an article if it contains a brief biography

_____ m. Catches the reader's attention using a quotation pulled from within the story

_____ n. Explains the content of a story; appears immediately below the headline as an external subhead

_____ o. Contains the mailing label, return address, indicia, address correction request, and possibly teasers to lure readers inside; located on the back cover of self-mailing newsletters

_____ p. Provide short statements to identify the contents of articles

_____ q. Appears as a secondary headline on the line above the main headline

_____ r. Provide additional detail, add emphasis, or further explain information contained in articles

_____ s. Provide information such as newsletter title and page number on the bottom of every inside page

_____ t. Supplements a longer article with related information

_____ u. Indicates that an article continues on another page

_____ v. Presents copy that recurs at the top of every inside page such as the title, subtitle, issue, date and the page number

Objective 10

Match elements of a multi-page document with their purposes. Purposes continue on the next page.

1. Cover
2. Glossary
3. Graphics
4. Index
5. Introduction
6. List of illustrations
7. List of symbols
8. References
9. Summary
10. Table of contents
11. Text
12. Title page

_____ a. Lists and defines important terms presented within text

_____ b. Gives complete title and subtitle, identifies author, and may present other information, such as list of contributors, date of publication, document abstract, reproduction restrictions, and distribution categories

_____ c. Provides listing of tables and/or figures contained in text

_____ d. Provides alphabetical listing of topics presented within text and gives page number where each topic appears

_____ e. Identifies document and protects contents

_____ f. Provides overview of document contents

_____ g. Lists sources of information and/or provides bibliographic documentation of materials used in writing text

_____ h. Presents main body of printed information

_____ i. Reviews points made in text and may express conclusions

_____ j. Identifies acronyms and symbols used in text

_____ k. Provide additional detail, add emphasis, or further explain information in text

_____ l. Identifies page numbers of major text sections

Objective 11

Distinguish among types of proofs by writing the correct numbers in the blanks.

1. Blueline or brownline proof
2. Color proof
3. Digital proof
4. Laser proof
5. Press proof
6. Revised proof
7. Visual editing

_____ a. Proof that provides protection for printers and customers by permitting detection of errors made during corrections before material has been put in page form

_____ b. Operator reads copy on computer screen, checking for errors, changes, or omissions, and by use of a cursor, locates and corrects the copy

_____ c. Expensive proof intended primarily for color separations

_____ d. Prepress, photographic proof of all pages in a printed job that is used if there are elements that will not show on a photocopy

_____ e. Proof made on the press using the plates, paper, and ink specified for the job; used primarily for premium four-color jobs

_____ f. Proof made by outputting electronic files on a high-resolution, high-quality printer

_____ g. Proof printed on plain bond; corrections are marked directly on proof

Objective 12

Distinguish between work-and-tumble and work-and-turn by placing a "TB" by work-and-tumble descriptions and a "TU" by work-and-turn descriptions.

_____ a. The sheet is printed on one side and then turned right over left so that the back can be printed.

_____ b. The sheet is printed on one side, flipped head over heels, and printed on the other side.

_____ c. The leading edge is not changed thus only one gripper margin is required.

_____ d. After flipping, the paper has a new leading edge, requiring two gripper edge allowances.

Written Test

Objective 13

Match terms associated with imposition with their definitions.

1. Creep
2. Electronic imposition
3. Gripper edge
4. Imposition
5. Manual imposition
6. Signature

_____ a. Edge of a sheet of paper that enters a sheetfed press first

_____ b. Arrangement of pages so that when printed, the press sheet can be folded and bound with the pages in proper sequence

_____ c. A printed sheet containing a number of pages, usually 4, 8, 16, 32, or 64, that is folded and bound to become part of a publication

_____ d. Specialized software that arranges the pages digitally into the proper formation for a signature to be produced

_____ e. Slight outward movement of the inner pages of a signature when collated and folded for saddle-stitch binding

_____ f. A labor-intensive process where individual pages are precisely arranged and taped (or stripped) onto flats

Objective 14

Match terms associated with color trapping with their definitions.

1. Choke
2. Knockout
3. Overprint
4. Spread
5. Trapping

_____ a. Background object is stroked to the inside so object laying on top of the knockout overlaps the background color to avoid misregistration or unsightly gaps between colors

_____ b. Method used to prevent visible gaps (white lines) from appearing between two objects of different ink colors

_____ c. When one ink color prints on top of another ink color

_____ d. Foreground object is stroked to spread into the underlying background color

_____ e. A hole created in the background separation allowing the top most color to print in the opening created

Written Test

Objective 15

Complete statements concerning trapping by writing the correct answers in the blanks provided.

a. Trapping is most important with ____________________ jobs where different colors overlap each other.

b. Trapping is more important for products printed on a high-speed ______ press than products printed on a ______________ press.

c. Many illustration, image-editing, and ________________ software packages provide built-in trapping features.

d. Commercial printers can often compensate for potential trapping problems by exposing film slightly longer when making plates. This process subtly ________________ the width of lines.

e. Service bureaus may prefer to create trapping using specialized ________________ such as TrapWise rather than having the customer perform the trapping.

f. ____________________ black information such as small text or thin lines. This compensates for misregistration because of the background inks.

g. Trapping commands ______________ the time a file takes to output.

Objective 16

Select true statements concerning preflight check and its role in successful job completion by placing an "X" next to the true statements.

_____ a. A preflight check is a quality control process that aids in successful output by gathering information, reviewing the file, and outputting paper proofs.

_____ b. Preflight software checks electronic documents and alert the EPP operator to potential problems. The EPP operator reviews the potential problems and decides what needs to be fixed.

_____ c. When preflighting a job, inspect the job to ensure that all fonts used in the document were packaged with job.

_____ d. Part of the preflight check is to ensure that all graphics files are included with the job.

_____ e. Any unused colors that were not deleted will be flagged during a preflight check utilizing preflight software.

Written Test

Objective 17

List items that should be collected for output and sent to service bureau/print shop with print job.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

Objective 18

Select true statements concerning the benefits of PDF files by placing an "X" next to the true statements.

_____ a. PDF files can only be viewed on Windows-based computers.

_____ b. PDF files do not require the fonts, artwork, and software used to create the publication.

_____ c. A PDF archive can be opened, printed, and exchanged on any Macintosh, Windows, or UNIX computer.

_____ d. Large libraries of PDF files can be indexed and searched, and text and images can be copied into other applications.

_____ e. PDF files can only be made with Adobe Acrobat software. Software programs are not capable of exporting files as Adobe PDF.

Objective 19

Select true statements concerning types of file compression by placing an "X" next to the true statements.

_____ a. File compression software compacts data to make files small so that they take up less disk space.

_____ b. JPEG compression software is a lossless form of file compression.

_____ c. Lossy compression selects details that are important to the image and discards the rest.

_____ d. Lossless compression replaces strings of repeating characters with a single character to make the file smaller and save disk space.

Objective 20

Match methods of transferring files with their descriptions.

1. Bulletin board services
2. E-mail attachment
3. FTP
4. LAN
5. Modem

_____ a. A hardware device that allows computers or other electronic devices to communicate over telephone lines

_____ b. Usually set up by an organization or club to provide or exchange information through a computer modem

_____ c. Computer network that allows files to be moved between computers within an organization or on the same network

_____ d. Allows users to download or upload files from a designated location through an Internet access provider

_____ e. Files are attached to electronic mail and transferred through an Internet service provider

Objective 21

Select true statements concerning PostScript error descriptions by placing an "X" next to the true statements.

_____ a. A PostScript error is a special code designed to address problems encountered while processing the original file through the RIP for imagesetting.

_____ b. The first line of a PostScript error message may indicate that processing has failed and the RIP has stopped executing the file.

_____ c. The second line of a PostScript error message shows the name of the error and the PostScript command causing the error.

Written Test

Objective 22

Match common PostScript errors with their solutions.

1. configurationerror
2. <fontname> not found, using Courier
3. invalidaccess
4. ioerror
5. limitcheck
6. rangecheck
7. stackoverflow
8. typecheck
9. VMerror

Error Name	Usual Meaning	Common Problems & Solutions
_____ a.	A requested feature setting cannot be satisfied; often accompanied by an extra ErrorInfo field in the error message indicating the requested feature.	Do not request the feature from the printer driver, use a different printer support file, or configure the RIP to support the feature.
_____ b.	An attempt was made to put an object into a read-only data structure.	These operators store objects in various PostScript data structures; error requires advanced debugging.
_____ c.	An input/output error occurred while the RIP was processing a file; the file in question could be the actual job or another file referenced by the job file.	The amount of data supplied is incorrect; scan, edit, or import the image again. These characters may indicate a problem with the communications link; move or replace the communications line, check communications settings, disable spoolers, or run the job again.
_____ d.	An implementation or memory limit has been exceeded often because the file or file elements are too large or complex.	A graphic is too complex . Increase flatness, split paths, simplify the graphic, or lower the printer engine's resolution. The image is too large, its resolution is too high, or it cannot be rotated. Reduce the size or resolution, rotate the image at a different angle, or rotate it in an image-editing application.
_____ e.	A value provided to the operator was outside the acceptable range.	The requested paper tray does not exist; request a different tray from the printer driver.
_____ f.	This is a programming problem concerning the filling up of an internal data structure called the operand stack.	May indicate a printer driver problem or interference from a separate utility; requires advanced debugging.
_____ g.	The operator expected a certain type of value on the operand stack, but the wrong type was provided instead.	May be a printer driver problem or interference from a separate utility; requires advanced debugging.
_____ h.	The RIP has run out of PostScript virtual memory (VM) during the job.	Reboot the RIP to clear its memory.
_____ i.	The requested font was not supplied by the RIP or was not within the PostScript file.	Download the missing font to the RIP, include it in the document, or choose a different font.

Objective 23

Select true statements concerning backup utilities and their importance by placing an "X" next to the true statements.

______ a. Backup utilities cannot restore files to the hard drive.

______ b. It is best if backups are only completed once a year.

______ c. All companies should include a regular backup routine in their computer operating procedures.

Objective 24

Select true statements concerning Macintosh-to-Windows and Windows-to-Macintosh file conversion by placing an "X" next to the true statements.

______ a. The Macintosh platform requires a file extension to recognize the document type.

______ b. Save all files with the required extension to facilitate transfer between platforms.

______ c. If a file is saved in its native format, it can typically be transferred, opened, and edited between computer platforms as long as the same software versions are utilized.

Objective 25

Complete statements concerning imagesetter and film processor quality control checks by writing the correct words in the blanks.

a. ______________ exposed film darkens halftones, thickens lines, and and fattens type. __________________________ exposed film causes halftones to plug and lines and type to be too thin.

b. ______________________ can be caused by dust, dirt, or rough edges on the film box, imagesetter film path, or takeup cassette.

c. Check film for opacity in areas that should appear ________________.

d. When checking for font problems, watch fonts replaced with Courier, odd spacing between characters, and ________________ in a paragraph.

e. Check for ________________________ or added elements on each film separation.

f. Cloudy or foggy areas are probably a result of old chemistry. Try adjusting the ________________________ speed.

g. When checking overprinting and knockouts, look for elements that are __________________________ and those requiring tight registration.

h. When checking ________________ , look to see that objects extend beyond the crop mark boundaries.

i. Verify that ______________________________ colors appear correct in in trapped items.

j. Check for dot values, consistency, and smooth gradations in tints and ____________________________.

*Permission to duplicate this test is granted.

Answers to Written Test

Objective 1

a. 8
b. 11
c. 10
d. 5
e. 1
f. 13
g. 3
h. 7
i. 2
j. 12
k. 4
l. 9
m. 6

Objective 2

Description should include the following:

a. Set page orientation
b. Set margins and columns
c. Place text
d. Apply fonts and font typestyles
e. Place graphics
f. Edit text
g. Edit graphics
h. Adjust white space
i. Print rough draft
j. Proofread rough draft
k. Revise text and graphics
l. Print final draft
m. Proofread final copy
n. Preflight document
o. Collect items for ourput
p. Send document to print shop

Objective 3

Any four of the following:

a. Use text tool to insert, delete, move, or modify text blocks
b. Change column width
c. Adjust amount of text in columns
d. Flow text from column to column or page to page
e. Wrap text around graphics
f. Change leading, letter spacing, and word spacing
g. Change type size
h. Align text (flush left, flush right, center, or justify)

Objective 4

a, c, f, g

Objective 5

a, b, c, d, e

Objective 6

a. 2
b. 5
c. 1
d. 3
e. 4

Answers to Written Test

Objective 7

a. 4
b. 16
c. 1
d. 5
e. 6
f. 2
g. 9
h. 19
i. 7
j. 3
k. 11
l. 12
m. 13
n. 14
o. 15
p. 17
q. 18
r. 8
s. 10

Objective 8

a. 2
b. 4
c. 5
d. 3
e. 1

Objective 9

a. 6
b. 2
c. 9
d. 17
e. 4
f. 15
g. 18
h. 1
i. 22
j. 12
k. 21
l. 3
m. 19
n. 5
o. 16
p. 11
q. 14
r. 8
s. 7
t. 20
u. 13
v. 10

Objective 10

a. 2
b. 12
c. 6
d. 4
e. 1
f. 5
g. 8
h. 11
i. 9
j. 7
k. 3
l. 10

Objective 11

a. 6
b. 7
c. 2
d. 1
e. 5
f. 3
g. 4

Objective 12

a. TU
b. TB
c. TU
d. TB

Objective 13

a. 3
b. 4
c. 6
d. 2
e. 1
f. 5

Objective 14

a. 1
b. 5
c. 3
d. 4
e. 2

Objective 15

a. Spot color
b. Web, sheetfed
c. Page-layout
d. Increases
e. Software
f. Overprint
g. Increase

Answers to Written Test

Objective 16

a, b, c, d, e

Objective 17

a. File that is to be output
b. Fonts used in document including screen and printer fonts
c. All graphics files used in document
d. Proof of what the job should look like when printed
e. Electronic filesheet

Objective 18

b, c, d

Objective 19

a, c, d

Objective 20

a. 5
b. 1
c. 4
d. 3
e. 2

Objective 21

a

Objective 22

a. 1
b. 3
c. 4
d. 5
e. 6
f. 7
g. 8
h. 9
i. 2

Objective 23

c

Objective 24.

b, c

Objective 25

a. Over, under
b. Scratches
c. Black
d. Lines
e. Missing
f. Processing
g. Reversed
h. Bleeds
i. Overlapping
j. Halftones

Unit 7 Layout and Document Preparation

Prerequisites:
None

Learning Activities Sheet

Student Name ______________________________

Place a checkmark in the appropriate box as you complete each of the steps below.

☐ 1. **Take** Pretest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 2. **Read** Objective Sheet.

☐ 3. **Study** Information Sheet, Objectives 1 through 6.

Optional

☐ 4. **View** Videotape entitled *Layouts and Output.*

☐ 5. **Observe** Demonstration of procedures to be used in completing Job Sheet 1.

☐ 6. **Do** Job Sheet 1, "Stack Graphics and Text."

☐ 7. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 8. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 1 and repeat steps 3, 5, and 6.

☐ 8. **Study** Information Sheet, Objectives 7 and 8.

☐ 9. **Do** Assignment Sheet 1, "Proofread a Document."

☐ 10. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 11. If the evaluation is not satisfactory, repeat steps 8 and 9.

☐ 11. **Study** Information Sheet, Objective 9, and Student Supplement 1.

Optional

12. **View** Videotape entitled *Designing Documents to Avoid Production Problems.*

☐ 13. **Do** Assignment Sheet 2, "Determine Specifications for a Newsletter."

Learning Activities Sheet

☐ 14. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 15. If the evaluation is not satisfactory, repeat steps 11 and 13.

☐ 15. **Observe** Demonstration of procedures to be used in completing Job Sheet 2.

☐ 16. **Do** Job Sheet 2, "Produce a Newsletter."

☐ 17. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 18. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 2 and repeat steps 15 and 16.

☐ 18. **Study** Information Sheet, Objective 10, and Student Supplement 2.

Optional ☐ 19. **View** Videotape entitled *Useful Electronic Design Tips to Ensure the Smooth Processing of Your Document.*

☐ 20. **Do** Assignment Sheet 3, "Determine Specifications for a Multi-Page Document."

☐ 21. **Stop** Have instructor evaluate the completed assignment sheet and if the evaluation is satisfactory, continue to step 22. If the evaluation is not satisfactory, repeat steps 18 and 20.

☐ 22. **Observe** Demonstration of procedures to be used in completing Job Sheet 3.

☐ 23. **Do** Job Sheet 3, "Produce a Multi-Page Document."

☐ 24. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 25. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 3 and repeat steps 22 and 23.

☐ 25. **Study** Information Sheet, Objective 11 and 12.

☐ 26. **Observe** Demonstration of procedures to be used in completing Job Sheet 4.

	☐	27.	**Do**	Job Sheet 4, "Create Single Color Layout Using Work-and-Turn and Work-and-Tumble."
	☐	28.	**Stop**	Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 29. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 4 and repeat steps 25 and 26.
	☐	29.	**Study**	Information Sheet, Objective 13.
	☐	30.	**Observe**	Demonstration of procedures to be used in completing Job Sheet 5.
	☐	31.	**Do**	Job Sheet 5, "Create a Document Using Imposition."
	☐	32.	**Stop**	Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 33. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 5 and repeat steps 29 through 31.
	☐	33.	**Study**	Information Sheet, Objectives 14 and 15.
Optional	☐	34.	**View**	Videotape entitled *To Trap or Not to Trap...And Other Important Prepress Considerations.*
	☐	35.	**Observe**	Demonstration of procedures to be used in completing Job Sheet 6.
	☐	36.	**Do**	Job Sheet 6, "Create a Vector Drawing with Trapping."
	☐	37.	**Stop**	Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 38. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 6 and repeat steps 33, 35, and 36.
	☐	38.	**Study**	Information Sheet, Objective 16, and Student Supplement 3.
Optional	☐	39.	**View**	Videotape entitled *File Preparation and Proofing Steps Designers Can Use to Avoid Problems in Production.*
	☐	40.	**Observe**	Demonstration of procedures to be used in completing Job Sheet 7.

Learning Activities Sheet

☐ 41. **Do** Job Sheet 7, "Preflight a Document."

☐ 42. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 43. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 7 and repeat steps 38, 40, and 41.

☐ 43. **Study** Information Sheet, Objective 17, and Student Supplement 4.

☐ 44. **Observe** Demonstration of procedures to be used in completing Job Sheet 8.

☐ 45. **Do** Job Sheet 8, "Collect Document for Output at Service Bureau."

☐ 46. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 47. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 8 and repeat steps 43 through 45.

☐ 47. **Study** Information Sheet, Objective 18.

☐ 48. **Observe** Demonstration of procedures to be used in completing Job Sheet 9 and Job Sheet 10.

☐ 49. **Do** Job Sheet 9, "Produce Customer-Specified Document" and Job Sheet 10, "Package a File Using PDF."

☐ 50. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 9 and 10, continue to step 51.

☐ 51. **Study** Information Sheet, Objectives 19 and 20.

☐ 52. **Observe** Demonstration of procedures to be used in completing Job Sheet 11 and Job Sheet 12.

☐ 53. **Do** Job Sheet 11, "Use a File Compression Utility for File Transfer or Storage" and Job Sheet 12, "Transfer Document Using Telecommunications."

☐ 54. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 11 and 12, continue to step 55.

☐ 55. **Study** Information Sheet, Objectives 21 through 24.

☐ 56. **Observe** Demonstration of procedures to be used in completing Job Sheet 13, Job Sheet 14, and Job Sheet 15.

☐ 57. **Do** Job Sheet 13, "Use a Backup Utility to Create Tapes/Disks," Job Sheet 14, "Use a Backup Utility to Restore Files to Hard Drive," and Job Sheet 15, "Burn a CD."

☐ 58. **Stop** After completing each job sheet, have your instructor evaluate your performance. If the evaluation is satisfactory, continue to the next job sheet. If the evaluation is not satisfactory, study the procedure outlined in that job sheet, and redo the job sheet. After satisfactorily completing Job Sheets 13, 14, and 15, continue to step 59.

☐ 59. **Study** Information Sheet, Objective 25.

☐ 60. **Observe** Demonstration of procedures to be used in completing Job Sheet 16.

☐ 61. **Do** Job Sheet 16, "Perform Quality Control Checks on Film Processor and Imagesetter."

☐ 62. **Stop** Have instructor evaluate your performance and if the evaluation is satisfactory, continue to step 63. If the evaluation is not satisfactory, study the procedure outlined in Job Sheet 16 and repeat steps 59 through 61.

☐ 63. **Check** With instructor for any additional assignments to be completed.

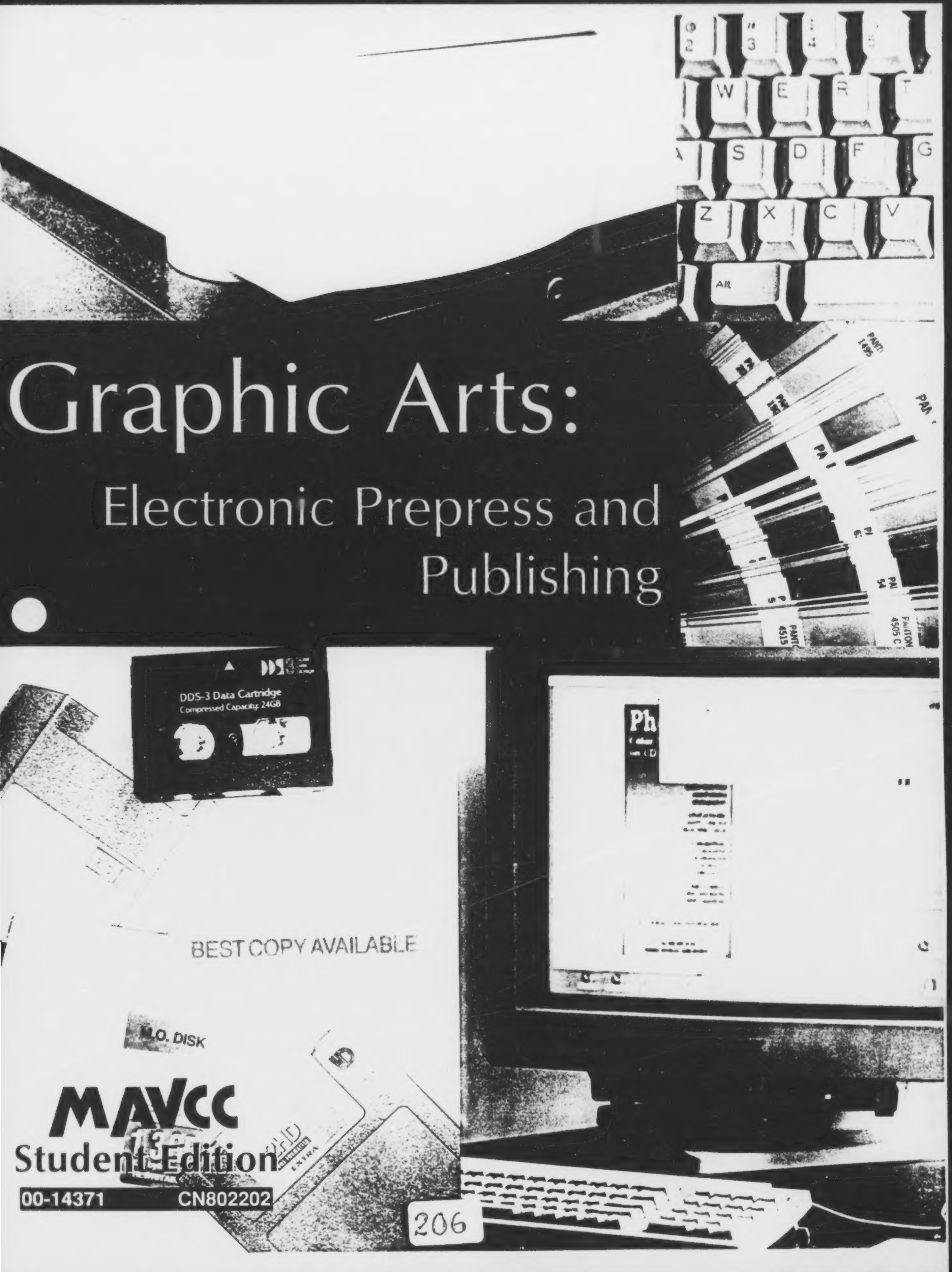
Learning Activities Sheet

☐ 64. **Do** Additional assignments listed below.

☐ 65. **Take** Posttest provided by instructor. After test has been evaluated, follow instructor's recommendations.

☐ 66. **Stop** Have instructor evaluate your unit performance. If the evaluation is satisfactory, proceed to next learning activities sheet. If evaluation is not satisfactory, ask instructor for further instructions.

***Permission to duplicate this form is granted.**


DDS-3 Data Cartridge
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Graphic Arts:

Electronic Prepress and Publishing

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Graphic Arts
Electronic Prepress and Publishing

First Edition

Student Edition

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Unit 1

Introduction to Electronic Prepress

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Unit 1 Introduction to Electronic Prepress

Objective Sheet

Unit Objective

After completing this unit, the student should be able to identify the basic elements of an electronic prepress system and select simple and complex EPP documents. The student will demonstrate these competencies by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to electronic prepress with their definitions.
2. Define electronic prepress (EPP).
3. Match basic elements of an EPP system with their definitions.
4. Arrange in order the typical steps in the EPP process.
5. List benefits of EPP.
6. Match typical EPP job classifications with their functions.
7. List characteristics of a professional EPP operator.
8. List factors to consider before purchasing an EPP system.
9. Select from a list characteristics of a quality EPP work environment.
10. Select from a list factors used to determine if a document is suitable for EPP.
11. Select from a list simple EPP documents.
12. Select from a list complex EPP documents.
13. List sources of EPP information.
14. Discuss copyright law applying to EPP.
15. List the three elements in an official U.S. copyright notice.
16. Survey Internet or periodicals for current articles on EPP technology. (Assignment Sheet 1)
17. Survey an electronic prepress workstation and rate it for ergonomic suitability. (Assignment Sheet 2)
18. Collect samples of simple and complex EPP documents. (Assignment Sheet 3)

Information Sheet

Objective 1

Terms and definitions

a. **Compact disc** (CD)—A plastic disc containing a continuous spiral track on which information is encoded to be read by a low-powered laser beam and photo diode detector. One CD can store up to 650 MB of information.

Note: CDs are usually read-only media (ROM), although there are special drives that can read and write/burn CDs.

b. **Cursor**—Character or marker displayed on a computer monitor indicating position within a working document where characters will appear when keys are pressed

Note: A cursor may appear as a square, underline, or blinking character or marker.

c. **Document**—Printed or digital information usually combining text (copy) and graphics (artwork and/or photographs)

d. **Floppy diskette** (floppy)—3 1/2" removable mylar magnetic media encased in a thin plastic sleeve used by the computer to store and retrieve information. One floppy can store up to 1.4 MB of information.

e. **Layout**—Overall plan or design of a document or page containing text and/or graphics

f. **Media**—Common computer-technology term referring to the many types of materials used in data storage and retrieval

g. **Menu bar**—List of software-program options usually appearing near the top portion of a monitor screen after a program is opened

h. **Pagination**—Process of dividing a document into pages for printing and/or adding page numbers to each page

i. **RIP** (Raster Image Processor)—Hardware and/or software that translates object-oriented graphics and fonts into printable dots

Objective 2

Definition of electronic prepress (EPP)—Digital process dedicated to the preparation of materials for output to imagesetters, large-format printers, platesetters, or other PostScript-type devices at a print shop

Note: Sending digital files to a print shop requires adherence to strict guidelines in the electronic preparation of these files. Failure to follow these guidelines results in lost productivity and wasted time.

Objective 3

Basic elements of an EPP system

In the electronic prepress process, a publication goes through an integrated cycle involving many professionals responsible for a specific stage or task. This cycle is performed through the use of the following basic elements.

a. EPP operator/team—Individual or group responsible for operating the hardware and software used in the preparation of a digital document

b. Hardware—Equipment or physical parts of an EPP system including input and output devices necessary to complete the task

c. Software—Application programs that allow the computer operator to operate the EPP hardware efficiently. The software accepts instructions from various input devices and translates these instructions to the computer hardware.

Objective 4

Typical steps in the EPP process

Note: The following steps may be completed by an individual or may be divided among several different people. In some instances the electronic prepress operator/team may complete all of the following steps, while in other instances they may receive the job at step e.

a. Create text and graphics to be used in the project.
    - Use word processing or page-layout program to create text file.
    - Use a digital camera, scanner, illustration software, image-editing software, clip art, or photo CDs to create graphics.

b. Design and lay out document using page-layout software.
    - Import or place text and graphics in page-layout program.

c. Print the document on a laser printer for proofing.

d. Make corrections in page-layout program.

e. Run preflight check program to check for potential printing problems such as missing fonts, graphics, etc.

f. RIP the document and send to imagesetter for film output.
    - If the document is sent directly from the RIP to a platesetter or press, a digital proof is created to check the document before printing.

g. Make a blueline or color proof for final proofing and authorization.
    - If corrections need to be made, the document must be RIPped again and re-sent to the imagesetter to output new film. This is a very expensive process.

h. If blueline is approved, plates are created for job to be sent to the press.

Objective 5

Benefits of EPP

a. Combines the tasks of many individuals into one operation

b. Provides more control over final editing, design, and layout

c. Increases capabilities, reduces costs, and cuts turn-around times

Objective 6

Typical EPP job classifications

Note: Individuals involved in the electronic prepress process can be classified into various numbers of job classifications depending upon the number of individuals available in the EPP operation. The job classifications listed below are typical of many EPP organizational charts.

a. EPP operator—Prepares electronic documents to be printed to high resolution output devices

b. EPP coordinator—Oversees and manages the EPP process

c. Designer (layout artist)—Plans and designs the layout

d. Computer illustrator—Designs and creates digital graphics

e. Digital image specialist—Scans, manipulates, and color corrects continuous tone images and graphics

f. Editor/proofreader—Checks printed copy for errors, content, and necessary revisions

g. System coordinator/operator—Maintains the hardware and software used in the EPP process

Objective 7

Characteristics of a professional EPP operator

a. Good organizational skills

Note: The EPP operator must be familiar with his or her job description to plan efficiently and avoid last-minute crisis situations.

b. Able to meet deadlines and handle stress

c. Able to take initiative and work independently

d. Has good writing skills

e. Understands written and verbal instructions

f. Is patient, flexible, and open to change

g. Has good problem-solving skills and is able to make decisions

h. Has excellent computer skills

i. Stays up-to-date with emerging technologies in EPP field

j. Is an accurate keyboard operator and a good proofreader

k. Is able to work effectively in teams

l. Handles others' materials with respect and maintains confidences when necessary

m. Knows copyright law

Objective 8

Factors to consider before purchasing an EPP system

a. Types of publications commonly produced

b. Number of available staff

Note: An EPP system can be valuable if staff size is limited because an EPP system can combine tasks assigned to many individuals and streamline production.

c. Amount of training time available

Note: Training time can be minimal for simple applications; more complex applications may require hiring consultants to train EPP operator(s). Question training consultants carefully on fees or rates. Some consultants base rates on number of individuals trained; others charge per hour of training without limiting group size.

d. Equipment and software currently available

Note: EPP may be accomplished on the equipment and software currently available to you, or you may have to acquire additional equipment. However, people who purchase EPP equipment often make two mistakes: (1) they do not fully utilize the equipment and software they presently own, and (2) they over-purchase new equipment. Be practical.

e. Cost-effectiveness in relation to use, available staff, and currently available equipment and software

Objective 9

Characteristics of a quality EPP work environment

a. Provides comfortable, adjustable chairs that adequately support operator's lower back and encourage good posture

Note: Ergonomically correct chairs allow the user to adjust the height to fit his or her size and are helpful when several individuals use the same workstation.

b. Provides work surfaces at, or adjustable to, the optimum height for the user from floor to work surface

Note: Work surfaces positioned at the optimum height allow the operator to relax his or her shoulders, arms, and wrists.

c. Provides a well-designed mouse, trackball, and wrist rest which are comfortable and easy to use

Note: Avoid resting your wrists while you are typing. You should only use a wrist rest when not typing since the weight of the arms and hands is concentrated on the unprotected median nerve causing *wrist resting syndrome*, a new trauma which feels and looks like carpal tunnel syndrome.

d. Provides a document holder for data-entry tasks

Note: The document holder should be located so the operator is not required to twist their head or neck between the document and the screen extensively or for long periods of time.

e. Provides monitor that allows for proper adjustment of contrast and brightness

Note: Eyestrain results from a monitor that is too bright, too dim, or lacks crispness.

f. Provides low key, diffused lighting to prevent glare on monitor

g. Provides adequate temperature and humidity control

h. Provides for appropriate shift lengths and work breaks

Note: Operators should be encouraged to stand up and walk away from a workstation to relax eyes and back and shoulder muscles. A break of even a few minutes will improve productivity and accuracy. And remember to blink! If you are working at a computer, make sure to blink your eyes to prevent them from drying out.

Objective 10

Factors used to determine if a document is suitable for EPP

Note: Frequently published multi-page documents that require numerous revisions are well suited for EPP.

a. Frequency of publication

b. Document size

c. Number and type of graphics required

d. Typical number of revisions required

e. Design capabilities required

f. Capabilities of existing EPP equipment

Information Sheet

Objective 11

Simple EPP documents

a. Resumés
b. Business cards
c. Flyers
d. Advertisements
e. Certificates
f. Transparency masters
g. Flowcharts
h. Letterhead
i. Envelopes
j. Table tents

Objective 12

Complex EPP documents

a. Proposals
b. Annual or quarterly reports
c. Magazines
d. Newspapers
d. Brochures
e. Catalogs
f. Books/booklets
g. Technical reports
h. Newsletters
h. Forms

Objective 13

Sources of EPP information

a. Computer and printer dealers
b. Software companies
c. Hardware manufacturers
d. Computer and EPP magazines, newsletters, books, and Internet sites
e. University or technical-college personnel
f. Vocational-education instructors
g. EPP associations
h. User groups
i. People and businesses that use EPP systems

Examples: Printers, service bureaus, and freelancers

Objective 14

Copyright law applying to EPP

Note: Copyright laws apply to everyone and are intended to protect the rights of individuals, groups, or organizations that create original work. Further information on copyright law may be obtained by writing to the U.S. Copyright Office, Library of Congress,101 Independence Avenue S.E., Washington, D.C. 20559-6000, or by visiting the U.S. Copyright Office Web site at http://www.loc.gov/copyright.

a. Using copyrighted material without acknowledging and contacting the author or publisher for permission is illegal; violation of copyright law carries strict penalties.

   Note: Using text material from a published document or using graphics without permission is copyright infringement. EPP operators should always check material for copyright notices.

b. Duplicating copyrighted software is illegal.

   Note: An individual is permitted to make additional copies of software *only* for backup or archival purposes. *Pirating* is the common term for unauthorized duplication of software.

Objective 15

Elements in an official U.S. copyright notice

Note: An EPP publication can be copyrighted if you included an official copyright notice in the publication. There is no required form for official copyright notices, but they must include the following three elements.

a. The symbol ©, the word "Copyright," or the abbreviation "Copr."

b. The year of first publication

c. The name of the copyright owner

Note: The following are all examples of official copyright notices that contain the three required elements.

- © 2000 Allen F. Smith
- Copyright 2000 Allen F. Smith
- Copr. 2000 Allen F. Smith

Student Supplement 1—An Ergonomic Checklist for Computer Workstations

Ergonomics—The study of the application of biology and engineering to the relationship between workers and their environments. Or the study of the physical interaction of the human body with various environments in which it is used in day-to-day activities.

This performance-oriented checklist is designed to help you evaluate what is needed for a good computer workstation arrangement. Specific dimensions are not included because no checklist can capture the needs of all sizes and shapes of people doing a variety of tasks with a variety of computer equipment. The checklist will, however, allow one to identify workstations which need redesign work, and will give you guidance on the goals of any workstation redesign that is required.

As you work through this list, remember that designing an ergonomically correct workstation will require an understanding and consideration of:

- the physical and psychological attributes of the person or persons who will be performing the job.
- the design and arrangement of the workstation furniture, computer hardware, computer software, and other workstation accessories.
- the tasks required to perform the job.
- the work environment, including such things as noise, vibration and temperature, as well as management and organizational methods and constraints.

Posture Checklist

"NO" answers to ANY posture question identify the item which may be contributing to an ergonomic risk which should be addressed immediately.

- Is the person able to rest their feet comfortably?
- Is the person able to sit with their knees in a comfortable position?
- Is the person free of uncomfortable pressure points, obstructions, or other interference in the lower extremities?
- Is the person able to work with their head in a vertical orientation?
- Is the person able to work with their head facing forward of the plane of the upper body for the majority of the time?

- Is the person able to reach to objects on the workstation without extended reaching, especially where reaching is held for long periods, is repetitive or requires twisting of the torso?
- Is the person able to work with comfortable arm positions or approximately:
    - neutral shoulder positions (upper arms tucked close to the body and hanging relaxed, not held to the side or extended forward or backward, raised up or hunched)?
    - comfortable elbow positions that do not force shoulder or elbow positions from approximately neutral?
    - neutral wrist positions (hands in a straight line with lower arms, hands not flexed down toward the palm, not extended up, nor bent towards the little finger, nor bent towards the thumb)?
- Does the workstation design and job requirements cause non-neutral body positions to be held constant for extended periods of time?

Workstation Design Features

Seat Surface

- Is the seat surface height adjustable so the person using the seat is able to set it at a comfortable height in relation to the required work activity?
- Is the seat surface of appropriate size to accommodate the specific person?
- Is the seat slope adjustable?
- Is the seat comfortable, and is the front well rounded, such that the person does not experience excess pressure on the underside of the leg because of the forward edge?
- Overall, is the seat comfortable to the person required to use it?

Seat Backrest

- Can the person easily adjust its height to provide lower back support?
- Can the person easily adjust its angle relative to the seat surface?
- Can the person easily adjust it to alter the depth of the seat?
- Overall, is it comfortable to the person that is required to use it?

Work Surface

- With the lower limbs in comfortable positions and feet on the floor, can the person achieve a comfortable work surface height?
- Is the width of the work surface appropriate, such that all required task accessories and duties can be located within comfortable reach and viewing distance?
- Is the depth of the work surface sufficient to allow the computer, and, if necessary, the keyboard to be placed directly forward of the person?
- Is the area under the desk large enough to accommodate the legs and any accessories, such as foot rests and arm rests?

Computer Monitor

- Is the person able to easily adjust the height of the monitor?
- Is the person able to easily adjust the fore-aft distance of the monitor?
- Is the person able to easily adjust the tilt (up/down) angle of the monitor?
- Is the person able to easily adjust the yaw (left/right) angle of the monitor?

Keyboard

- Is the keyboard detachable from the VDT/computer monitor?
- Is the person able to easily adjust the keyboard height?
- Is keystroke pressure comfortable to the person?

Mouse

- Is the shape and button activation comfortable and easy to operate for the person?
- Is the person able to reach and operate the mouse without extended, long duration, or repetitive reaching and with shoulders, arms and wrists in a neutral posture?
- Is the mouse on a position adjustable platform surface, so that it can be used within the person's immediate reach zone?

Document Holder

- Is there a special holder or support for the source document?
- Is the person able to easily adjust the document holder height, distance and angle?
- Does the device prevent the document from vibrating?
- Is the device located such that the person is not required to twist the head/neck back and forth between the document and screen extensively for long periods?

Arm and Hand Support

- Are seat or other padded arm rests available?
- Are arm rests adjustable (height, lateral position)?
- Is a broad, flat keyboard palm support available to support the hands in a neutral posture between bursts of typing movements?
- Is the palm supported for mouse use?

Foot Support

- Are the feet flat on the floor when the person is sitting comfortably at the workstation?
- Is a foot rest available if needed and can the person easily adjust its height and tilt?

Office Lighting

- Are lighting levels in the computer monitor area comfortable to the person?
- Is the monitor screen placed such that light from windows and overhead lighting do not cause glare? If not, are glare screens or other glare-reducing accessories used?
- Are diffusers or louvers used on overhead lights where screen glare is a problem?
- Are moveable task or desk lights available?
- Do work surfaces have a matte finish to reduce light reflection?
- Do windows have curtains, drapes or blinds to block light where glare from that source is a problem?

Temperature

- Is the person comfortable with the ambient temperature?
- Is the person comfortable with the temperatures of any equipment or surfaces on which there is bodily contact?

Vibration

- Does the person experience any uncomfortable building vibration (mechanical or outside traffic)?
- Does the person experience any uncomfortable equipment vibration (internal fans and motors)?
- Does the person experience any uncomfortable keyboard vibration (keyboard wobble from unstable work surface)?

Noise

- Are sound levels comfortable, allowing conversation and other communication without significant effort?
- Does the person experience any uncomfortable equipment noise sources (printer noise, air conditioning ducts etc.)?

Ventilation

- Is air circulation sufficient?
- Is air quality satisfactory?
- Is the air too dry or too humid?

Electrostatic shock

- Does the person frequently experience static electricity shocks?

This checklist is adapted from a similar work published on the Internet by Cornell University's Human Factors Group, Department of Design & Environmental Analysis, 1996.

Student Supplement 2—Sources of EPP Information

Magazines

Desktop Publishers Journal
462 Boston Street
Topsfield, MA 01983-1232
Tel: 978-887-7900
www.dtpjournal.com

NewMedia Magazine
P.O. Box 5310
Pittsfield, MA 01203-9998
www.newmedia.com

Before & After Magazine
1830 Sierra Gardens Dr. #30
Roseville, CA 95661
Tel: 916-784-3880
Toll-free: 1-877-COOLSTF (266-5783)
www.pagelab.com

PRINT Magazine
3200 Tower Oaks Blvd.
Rockville, MD 20852
Toll-free: 800-222-2654
www.printmag.com

Graphic Arts Monthly
345 Hudson St. 4th Floor
New York, NY 10014
Tel: 212-519-7320
www.gammag.com

Macworld
P.O. Box 54529
Boulder, CO 80323
Tel: 415-243-0505
Toll-free: 800-288-6848
http://macworld.zdnet.com/

Publish
Subscriber Services
P.O. Box 5039
Brentwood, TN 37024-5039
Toll-free: 800-656-7495
www.publish.com

eMediaweekly
P.O. Box 10633
Riverton, N.J. 08076-5033
www.emediaweekly.com

Digital Output
13000 Sawgrass Village Center,
Suite 18
Ponte Vedra Beach, FL 32082
Tel: 904-285-6020
E-mail: digout@mindspring.com
www.digitalout.com

American Printer
Reader Service Department
650 S. Clark Street
Chicago, IL 60605-9960
www.americanprinter.com

Electronic Publishing
10 Tara Blvd., 5th Floor
Nashua, NH 03062-2801
Toll-free: 800-331-4463 x537

Internet Sites

Graphic Comm Central
http://teched.vt.edu/gcc/

Tips on Outputting Electronic Files
www3.teleplex.net/jr/

PrePRESS Main Street
www.prepress.pps.com/

Student Supplement 2

Associations

American Institute of Graphic Arts (AIGA)
164 Fifth Avenue
New York, NY 10010
Tel: 212-807-1990
www.aiga.org

Printing Industries of America, Inc. (PIA)
100 Daingerfield Road
Alexandria, VA 22314-2888
Tel: 703-519-8100
www.printing.org

National Association of Printers and Lithographers (NAPL)
75 West Century Road
Paramus, NJ 07652
Tel: 201-634-9600
Toll-free: 800-642-6275
www.napl.org

NPES
Association for Suppliers of Printing, Publishing & Converting Technologies
1899 Preston White Drive
Reston, VA 20191-4367
Tel: 703-264-7200
www.npes.org

Association for the Development of Electronic Publication Techniques (ADEPT)
2251 South Michigan Avenue
Chicago, IL 60616
Tel: 312-326-6684

Graphic Arts Education Research Foundation (GAERF)
1899 Preston White Drive
Reston, VA 22091
Tel: 703-264-7200

Graphic Communications Association (GCA)
100 Daingerfield Road
Alexandria, VA 22314-2888
Tel: 703-519-8160
www.gca.org

International Prepress Association (IPA)
7200 France Ave. South, Suite 327
Edina, MN 55435
Tel: 612-896-1908
www.ipa.org

Graphic Arts Technical Foundation (GATF)
200 Deer Run Road
Sewickley, PA 15143-2600
Tel: 412-741-6860
Toll-free: 800-910-GATF
www.gatf.org

Technical Association of the Graphic Arts (TAGA)
68 Lomb Memorial Drive
Rochester, NY 14623-5604
Tel: 716-475-7470
www.taga.org

Association of Imaging Service Bureaus (AISB)
5601 Roanne Way, Suite 608
Greensboro, NC 27409
Tel: 800-844-2472

Objective 16

Assignment Sheet 1—Survey Internet or Periodicals for Current Articles on EPP Technology

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Reports indicate proper search was made	______

Basic Skills

Reading Writing

Introduction

In this unit you will be introduced to the area of graphic arts called electronic prepress (EPP). As an electronic prepress operator, it is important to stay up-to-date with software updates, hardware upgrades, and emerging technology.

Directions

Use the Internet or periodicals found in your facility and local library to gather at least five articles concerning current electronic prepress technology. On a separate sheet of paper, write a short synopsis of each article emphasizing the importance of the material covered and what it means to those using such technology in their jobs. Complete your reports and turn them in to your instructor.

Below are a few resources you might want to use in your research.

Desktop Publishers Journal
462 Boston Street
Topsfield, MA 01983-1232
Tel: 978-887-7900
www.dtpjournal.com

Publish
Subscriber Services
P.O. Box 5039
Brentwood, TN 37024-5039
Toll-free: 800-656-7495
www.publish.com

Graphic Arts Monthly
345 Hudson St. 4th Floor
New York, NY 10014
Tel: 212-519-7320
www.gammag.com

American Printer
Reader Service Department
650 S. Clark Street
Chicago, IL 60605-9960
www.americanprinter.com

Objective 17

Assignment Sheet 2—Survey an Electronic Prepress Workstation and Rate It for Ergonomic Suitability

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Report indicates student understands importance of ergonomics	______

Basic Skills

Reading Writing Critical Thinking

Directions

Visit an electronic prepress workstation and rate it for ergonomic suitability according to information presented in the Information Sheet and Student Supplement 1.

Survey the workstation and write a report on its suitability for an electronic prepress operator based on considerations listed in this unit. Complete the report and turn it in to your instructor.

Objective 18

Assignment Sheet 3—Collect Samples of Simple and Complex EPP Documents

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Collected five samples of simple EPP documents	______
• Collected five samples of complex EPP documents	______
• Presented examples to class	______

Basic Skills

Reading

Oral Communication

Directions

Collect five examples of simple EPP documents and five examples of complex EPP documents. Your collection should consist of ten documents, each representing a different type of EPP document. Once you've collected your samples, present the documents to your class.

Note: Sample documents can be obtained from local businesses, advertising agencies, manufacturers, etc.

Simple EPP Documents

- Resumés
- Business cards
- Flyers
- Advertisements
- Certificates
- Transparency masters
- Table tents
- Envelopes
- Flowcharts
- Letterheads

Complex EPP Documents

- Proposals
- Annual or quarterly reports
- Magazines
- Newspapers
- Brochures
- Catalogs
- Books/booklets
- Technical reports
- Newsletters
- Forms

Unit Contents

Student Components

Student Page

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Information Sheet 2-5

Student Supplements

1—Operating a Mouse 2-17
2—Common Macintosh System Troubleshooting Procedures 2-19

Assignment Sheets

1—Examine Computer Operating Manual(s) for Basic Operating Procedures 2-21
2—Complete an EPP System-Specifications List 2-23
3—Determine System Requirements for a Page-Layout Software Package 2-25
4—Determine Basic Costs of EPP Systems 2-27

Job Sheets

1—Start/Boot the Computer 2-29
2—Format a Disk 2-31
3—Back Up a Disk or Other Removable Media 2-33

Objective Sheet

Unit Objective

After completing this unit, the student should be able to identify hardware necessary for an electronic prepress operation and perform basic operating procedures. The student should demonstrate these competencies by completing the assignment sheets and job sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to EPP systems with their definitions.
2. Identify the major types of EPP hardware.
3. List types of computer systems used in EPP.
4. Match common operating systems used in EPP with their descriptions.
5. Describe the types of monitors used in EPP systems.
6. Match types of input devices used in EPP systems with their uses.
7. Complete statements concerning characteristics of types of storage devices used in EPP systems.
8. Match types of output devices used in EPP systems with their descriptions.
9. List the common features of low-end and high-end output devices used in EPP systems.
10. Discuss PostScript and its importance to printing.
11. Select true statements concerning networking.
12. Examine computer operating manual(s) for basic operating procedures. (Assignment Sheet 1)
13. Complete an EPP system-specifications list. (Assignment Sheet 2)
14. Determine system requirements for a specific software package. (Assignment Sheet 3)
15. Determine basic costs of EPP systems. (Assignment Sheet 4)
16. Start/Boot the computer. (Job Sheet 1)
17. Format a disk. (Job Sheet 2)
18. Back up a disk or other removable media. (Job Sheet 3)

Information Sheet

Objective 1

Terms and definitions

a. **Byte**—Unit of measure related to how much information a computer can manipulate and store

Note: Common measurements are kilobytes (K or KB), megabytes (MB), or gigabytes (GB).

b. **Central processing unit** (CPU)—Performs arithmetic and logical operations and decodes and executes instructions

Note: It is often referred to as the "brain" of the computer. The faster the CPU, the faster data is processed.

c. **Compact disc drive** (CD-ROM drive)—A mechanism designed to turn a CD in the presence of a laser beam and photo diode detector to read information encoded on the CD

d. **Compatible** (clone)—Computer with an operating system and software that simulate another computer manufacturer's products

e. **DPI** (dots per inch)—Measurement of the resolution at which an output device, such as an imagesetter or printer, displays text and graphics

f. **Floppy disk drive**—Used to read from and write information to floppy diskettes

g. **G3 and G4**—Apple's newest series of Power Mac computers with processing speeds up to 450 MHz

h. **GUI** (graphical user interface; pronounced gooey)—Refers to using graphics or icons along with a keyboard and a mouse, to provide an easy-to-use interface for some computer operations

Note: GUIs usually involve an icon on which a user can double-click the mouse button to go directly to an operation. Macintosh is purely a GUI computer. PCs use programs such as Windows to create a GUI shell to work within.

i. **Hard drive**—Device used to read, write, and store data on a hard, magnetic disk located inside the computer

Note: Hard drives can be either internal or external. Most hard drives are permanent, however removable hard drives are available.

j. **Icon**—Symbol representing a particular operation

k. **Input device**—Equipment used to enter information into a computer

l. **LPI** (Lines per inch)—Measurement of the screen frequency or resolution of a halftone image ranging from 65 lpi to 200 lpi

Note: LPI is also known as *line screen* or *screen frequency.*

m. **Memory**—Portion of computer that stores information and software while the machine is on

n. **Multitasking**—Using more than one application simultaneously

o. **Networking capability**—Ability to connect several workstations into one system that shares equipment and software

p. **Operating system**—Computer program responsible for housekeeping and establishing communications between disk storage device, computer, and printer; tells computer how to manipulate information

Examples: Mac OS, MS-DOS, UNIX, and Windows

q. **Pentium**—Intel Corporation's popular microprocessor chip which replaced the firm's 80486 chip in multitasking computers

r. **Pointer**—Icon indicating mouse position

s. **RAM** (random access memory)—Temporary memory that stores data and programs while computer is in use

Note: The computer system must have a minimum RAM capacity that is large enough to accommodate the system's software requirements.

t. **Raster image processor** (RIP)—Combination of computer hardware and software between the EPP operator's computer and the imagesetter that translates the PostScript file into a raster, which the output device can print

Note: A RIP can be a dedicated computer, on the same computer as the page-layout software, or built into the output device.

u. **Removable drive**—Storage device that uses some type of disk or cartridge for storing and transporting large files such as documents containing graphics

Examples: SuperDisk, Zip, Jaz, SyQuest, optical drives, rewritable CD-ROM drives, recordable CD-ROM drives

v. **Resolution**—The density of dots or pixels on a page or monitor usually measured in dots per inch (dpi)

w. **Storage device**—Equipment used to store and retrieve information on a computer

x. **Windows-like environment**—Graphic display that allows quick movement from one application to another without exiting the application

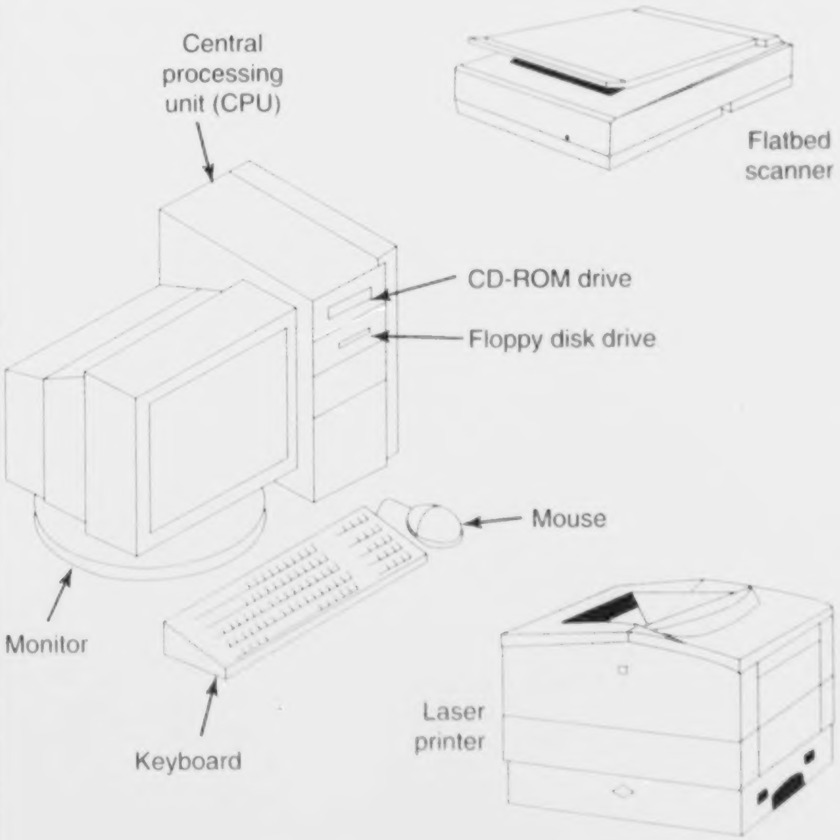
Note: "Windows" is a trademark of Microsoft.

Objective 2

Major types of EPP hardware

Note: The various types of EPP hardware will be defined throughout this unit.

Figure 1


Central processing unit (CPU)
Flatbed scanner
CD-ROM drive
Floppy disk drive
Mouse
Monitor
Keyboard
Laser printer

Objective 3

Types of computer systems used in EPP

a. Apple Macintosh

b. Windows-based platform

c. UNIX workstation

Objective 4

Common operating systems used in EPP and their descriptions

Note: This list of operating systems represents only a few of the systems available.

a. **MS-DOS** (Microsoft Disk Operating System)—System designed to be used with the original IBM personal computer but has come to be used with all IBM compatibles; it is the software required by your system to start up and run other programs; application features include word-processing, spreadsheet and other business applications.

Note: Windows 3.1, Windows 95, Windows 98, and Windows NT rely on MS-DOS and provide the user with a windows environment and a set of icons much like that of the Macintosh computer systems. To use Windows, the computer system should be equipped with an 80486 or Pentium CPU with minimum of 32 megabytes RAM memory.

b. **Macintosh Operating System** (Mac OS)—Operating system designed for Apple's numerous personal computer models

Note: Macintosh Operating System was the original graphical user interface (windows environment) See Student Supplement 1 for information on Mac OS troubleshooting procedures.

c. **UNIX**—System designed to be used with AT&T computers; application features include text-manipulation and cut-and-paste capabilities as well as multiuser, multitasking, multiplatform, and networking capabilities.

Note: UNIX is available by that name for PCs, but it's used in several related versions on different platforms, including A/UX on the Mac, AIX on IBM workstations, and the NeXT operating system.

Objective 5

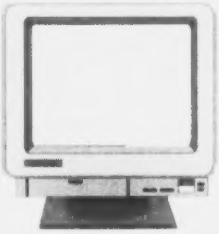
Types of monitors used in EPP systems

Note: Monitors are available in various types and sizes and should be selected according to their intended use. Monitors are sold by size of screen measured diagonally from corner to corner. Also, when purchasing monitors, remember that a monitor's capabilities are only as good as the graphics adapter board with which it is combined. The graphics adapter board provides the communication link among the graphics software, page-layout software, and the computer. It tells the monitor how to arrange graphics and text on the display.

a. Color—Displays multi-colors

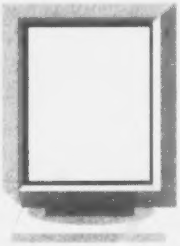
Examples: CGA, EGA, VGA, Super VGA

Figure 2—Standard monitor



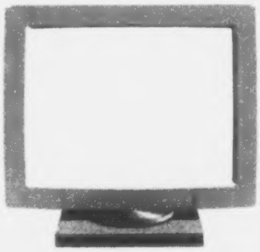
b. Full-page—Displays one full-size 8 1/2″ x 11″ page

Figure 3



c. Two-page—Displays two 8 1/2″ x 11″ pages simultaneously

Figure 4



Information Sheet

Objective 6

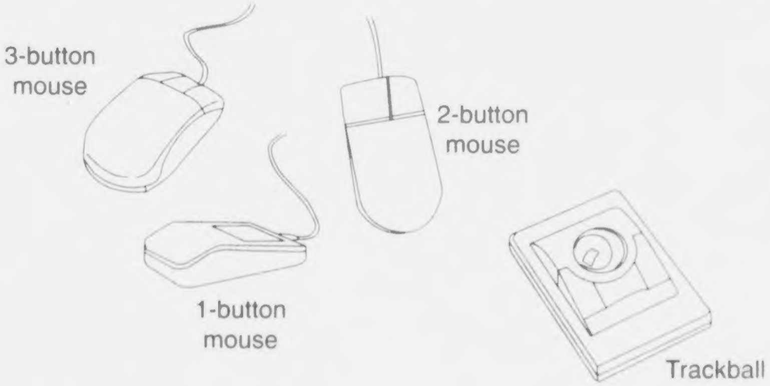
Types of input devices used in EPP systems

a. Keyboard—Used to enter information into the computer through the use of keys containing the alphabet, numbers, symbols, and functions

b. Mouse—Used to control the on-screen cursor or pointer when selecting items in pull-down menus, moving data, or drawing graphics in application software

Note: A mouse may have one, two, or three buttons, but the left button is usually the "main" mouse button. A mouse can be purchased as a trackball that moves on the desktop or as a fingertip-operated trackball.

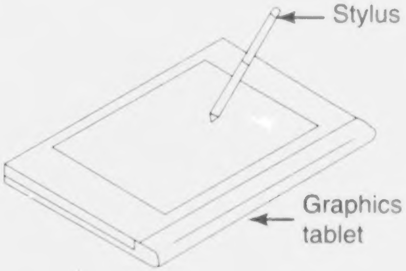
Figure 5



c. Pressure-sensitive tablet (graphics tablet)—Used to draw and mimic brush strokes and airbrush techniques; thin flat pad that sits on a desk and is used with a stylus

Note: This device is typically used with painting and drawing programs.

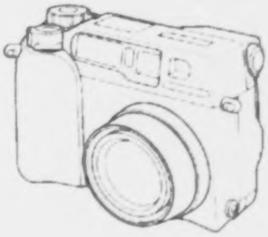
Figure 6



d. Digital camera—Used to record video or still images in a digital form rather than on a film negative. Images are transferred to the computer through cables, disks, or cartridges. There is a fixed, maximum resolution that can be recorded.

Note: The use of a digital camera can eliminate the need to scan images for electronic output.

Figure 7

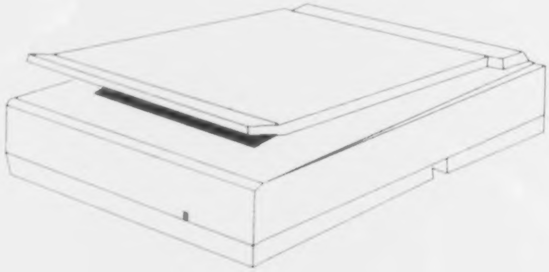


e. Scanner—Used to convert line art, photos, or text to digital data usable by the computer

Note: Scanners can reproduce images at reduced, enlarged, or original size and in color or in various shades of gray. Most scanners support optical character recognition (OCR) software used to scan typed text.

Examples: Flatbed scanner, handheld scanner, drum scanner, slide scanner

Figure 8—Flatbed scanner

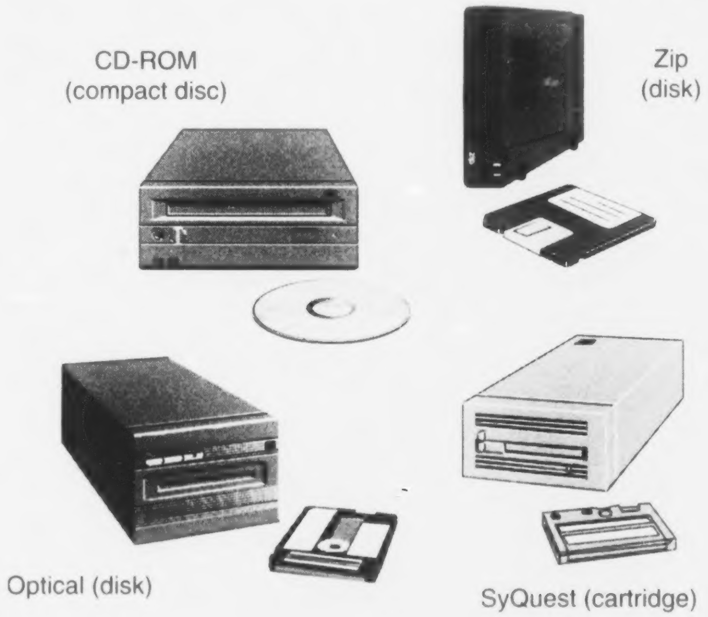


Objective 7

Types of storage devices used in EPP systems

Storage Device	Storage Capacity	Speed	Portability	Usage
Hard disk	Varies with system configuration. Typically has the most storage space in EPP system, currently up to 20GB. (Hard disks capable of storing greater amounts of data are rapidly being developed.)	Fastest 4–6MB/sec	Not Applicable	Stores OS, software applications, utilities, and documents you are currently working on
Zip	100MB or 250MB per disk	SlowYes 1.4MB/sec		For file transport/storage
Jaz	1GB or 2GB per disk	Fast 5.5MB/sec	Yes	Large, fast, removable storage
Optical disk	128MB, 230MB, 650MB	Slow 1.7MB/sec	Yes, but not widely used	Storage for archival and documents
Compact disc (CD)	Up to 650MB	Slow 61.4K/sec	Yes	Archiving and transport; very reliable
SyQuest	44MB, 88MB, 200MB	Slow	Yes	Storage, transport (Old technology)
SuperDisk	120MB	Slow	Yes	Storage, transport; new, not standard yet

Figure 9—Removable media storage devices



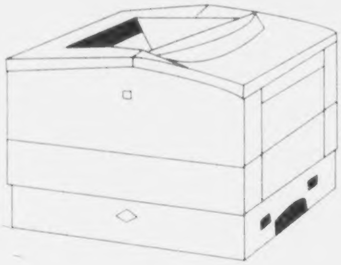
Objective 8

Types of output devices used in EPP systems

a. Low-end output devices

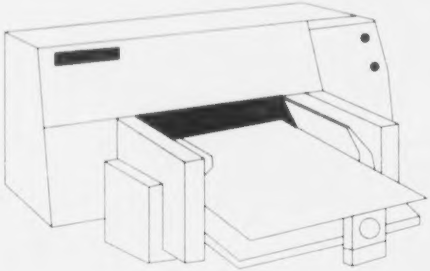
- Laser printer—Supplies a resolution of 300 dpi or greater; uses intense light and toner to transfer (or draw) images on paper

Figure 10



- Inkjet printer—Supplies near-laser-quality resolutions; forms characters and graphics by spraying ink on paper
- Thermal-wax transfer printer—Rolls of plastic film coated with four different colors of wax-based pigments are melted and transferred to the paper. Each color is applied in a separate pass, requiring the page to go through the printer several times.

Figure 11



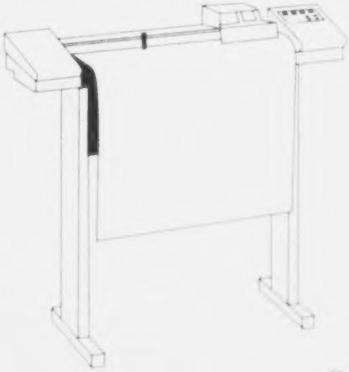
b. High-end output devices

- Imagesetter—Generates high-resolution (1200–3000 dpi) film separations from EPP document files

Figure 12

- Direct-digital press—EPP system sends digital files directly to the printing press. Some direct-digital presses transfer images onto electrophotographic cylinders instead of plates and use toner to print CMYK documents. Others send the digitized pages directly to special plates mounted on the press.
- Dye sublimation printer—Pigments are heated by the print head and penetrate the paper's special coating, blending to correct amount of each primary color (CMYK) to create the right color for each printed dot providing a photo-quality hard copy.
- Platesetter—EPP files are sent to and imaged directly onto aluminum or polyester plates using laser diodes. These are then loaded on the printing press.
- Wide-body inkjet printer—Laser color printer for on-demand or short-run oversized documents; used to print posters and displays

Figure 13



Objective 9

Common features of low-end and high-end output devices in EPP systems

a. Resolution

Note: Resolution starts at 300 dpi and goes up to 600 dpi for low-end laser printers; enhanced resolution is 800 dpi to 1,200 dpi; resolution goes up to 3,000 dpi for imagesetters, platesetters, and digital printing presses

b. RAM memory

Note: RAM can be added to most output devices by installing additional memory chips. 512K is minimum RAM necessary for EPP applications. 2MB to 6MB RAM is necessary to cache images and store additional fonts.

c. PostScript (Adobe's page-description language)

Note: This computer language has become the standard for describing electronic prepress documents containing EPS (Encapsulated PostScript) graphics to output devices.

d. Resident fonts (outline printer fonts)

Note: Most PostScript laser printers come with at least 13 built-in fonts, typically Times, Helvetica, Courier and Symbol. Many have 35 standard fonts coded into ROM (Read-Only Memory) chips inside the printer. Some printers have fonts stored on a hard drive mounted inside the printer to which you can add or delete fonts.

e. Screen fonts (soft fonts)

Note: Screen fonts are stored on the computer hard drive and downloaded to the output device during document printing.

Objective 10

PostScript and its importance to printing

a. PostScript is a powerful page-description language created by Adobe Systems for high quality and high resolution output. It is a mathematical language based on vector art which means the printer receives information as mathematical equations.

b. PostScript is important to printing because it tells a printer how to create complex letter forms and graphics. Almost all electronic prepress computers use the PostScript language to output files to printers.

Objective 11

Networking overview

a. Purpose of networks—To connect two or more computers allowing documents and resources to be shared

b. Types of networks

- LocalTalk—Simplest, cheapest and slowest type of network; connects computers using ordinary telephone cord
- Ethernet—Faster and more costly than LocalTalk; Ethernet comes built in on most Macintosh computers
- Fast Ethernet—Runs at 10 times the speed of Ethernet; requires an additional card for each computer on the network
- Ethernet hubs—Larger and more complex networks benefit from the increased speed and performance of using hubs to manage the flow of data between computers. Hubs help ensure that data does not get lost or corrupted.

c. Sharing files over a network

- Server—Local area networks (LANs) use one computer with a large hard drive to "serve" (provide information to) several or all computers connected between offices or buildings. This allows for file storage and document sharing on a common hard drive.
- Computer-to-computer—By connecting over a network, files can be copied from one computer to another much faster and easier than hand carrying those files.

Note: Working on a file located on another computer without copying the file is not recommended since this slows down both computers.

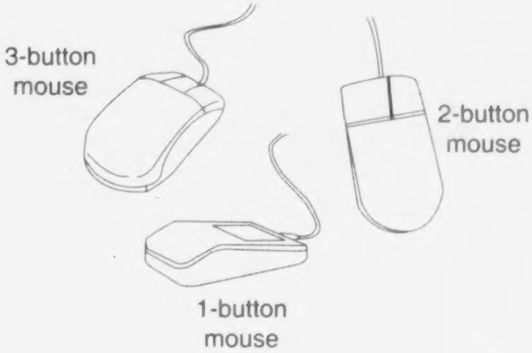
Student Supplement 1—Operating a Mouse

To operate electronic prepress software, you must know how to use a mouse and understand terms associated with mouse operations.

A mouse may have one, two, or three buttons, but the left button is usually the "main" mouse button. As the mouse is moved across a work surface, a pointer moves across the monitor screen. The shape of the pointer may change as different tasks are selected.

It is important to be familiar with the following basic mouse operations when working with software.

- Point—To move the tip of the pointer on top of an item on the monitor screen
- Click—To quickly press and then release mouse button
- Double-click—To quickly press and then release mouse button twice in quick succession
- Drag—To hold down mouse button while moving mouse to reposition pointer
- Select—To point on a menu or graphic item or to highlight text and then click or drag mouse so that text will be affected by the next action taken



Student Supplement 2—Common Macintosh System Troubleshooting Procedures

Message/Problem	Usual Meaning	Troubleshooting and Common Solutions
Computer will not turn on	Computer is not receiving power	Check all switches, plugs, surge protectors, attached devices such as scanner, CD-ROM, etc.
Flashing question mark	Mac cannot find System Folder	Check that all external hard drives are up and running; make sure startup drive contains the System file and Finder file; use startup disk to reload System Folder
Sad Mac	Indicates a serious system error	Contact your computer service and repair provider
Chimes of death	Sad Mac on a black screen (not gray) and plays the music "Chimes of Death"	Contact your computer service and repair provider
Screen freezes	Computer could be processing; static electricity; usually low memory; too much information for the computer to process	Try pressing Command Period; increase RAM memory in software application; try force quitting the application; restart computer by holding down the Command and Option keys and pushing the Power key on the keyboard
Unable to open a file	Disk or file could be locked; file is in use; application can't be found	Unlock disk (see upper corner of diskette) or file (Get Info); load actual application that file was created in and open document from within the application by choosing "File" and "Open" from the menu bar
System bombs	Most common cause is low RAM (Random Access Memory).	Save your work often; run only a few applications at a time; reduce the number of fonts and extensions in use; buy and install more RAM

Objective 12

Assignment Sheet 1—Examine Computer Operating Manual(s) for Basic Operating Procedures

Name ____________________ Overall Rating __________

Date ____________________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Instructions properly recorded	______

Basic Skills

Reading Writing Critical Thinking

Introduction

The procedures for operating Macintosh and Windows-based computers differ somewhat. Since students may have to operate both types of computers in the future, they should become familiar with the operating procedures for both platforms.

Note: Macintosh computers can read Windows-formatted diskettes, but Windows-based computers cannot read Macintosh-formatted diskettes unless special software has been installed on the PC.

Materials list

- Operating manual for Macintosh and/or Windows-based computer

Directions

Examine the operating manuals for the Macintosh and/or Windows-based computers used on site. Read the operating procedures for starting the computer and formatting a diskette. Record the instructions for these procedures on the blank lines provided.

1. Start/boot a Macintosh computer ____________________

____

____

____

____

____

____

____

Assignment Sheet 1

2. Start/boot a Windows-based computer

3. Format a diskette for use with a Macintosh

4. Format a diskette for use with a Windows-based computer

5. Back up a diskette or other removable media for use with a Macintosh

6. Back up a diskette or other removable media for use with a Windows-based computer

Objective 13

Assignment Sheet 2—Complete an EPP System-Specifications List

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Specifications were accurate	______

Basic Skills

Reading Writing Oral Communication

Directions

Examine an EPP system used in your classroom and interview the instructor to determine its specifications. Record the information you obtain on the blanks below.

1. Type of computer platform ______________________

   ____

2. Amount of RAM ______________________

   ____

3. Capacity of hard drive ______________________
4. Does the computer have a floppy drive? ______________________
5. Does the computer have a CD-ROM drive? ______________________
6. Type of keyboard (i.e., enhanced) ______________________

   ____

7. Type of monitor (i.e., color) ______________________

   ____

8. Type of mouse and number of buttons ______________________

   ____

Assignment Sheet 2

9. Type of modem and baud rate (if available) ______________________

____

10. Type of printer and resolution (dpi) ______________________

____

11. Type of scanner (if available) ______________________

____

12. Type of removable storage devices (if available) ______________________

____

13. Operating system ______________________

14. Is the computer connected to a network? ______________________

If so, what kind? ______________________

15. Word-processing software and version ______________________

16. Page-layout software and version ______________________

____

17. Illustration software and version ______________________

____

18. Image-editing software and version ______________________

____

Objective 14

Assignment Sheet 3—Determine System Requirements for a Specific Software Package

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Information recorded was accurate	______

Basic Skills

Reading Writing Critical Thinking

Directions

Select one word-processing software or page-layout software package. Determine the system requirements for using the software and record the information you obtain on the blanks provided below.

Name of software ______________________ Version __________

Type of software (check one) Word-processing Page-layout

Software system requirements

1. Type of computer ______________________

   ____
2. Amount of RAM recommended ______________________
3. Operating system ______________________
4. Hard disk space needed ______________________
5. Monitor requirements ______________________

   ____
6. Media required to load software ______________________
7. Printer recommendations ______________________
8. Scanner recommendations ______________________
9. Any additional peripherals recommended/required ______________________

   ____

Objective 15

Assignment Sheet 4—Determine Basic Costs of EPP Systems

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Questionnaire completed correctly	______

Basic Skills

Reading Mathematics Oral Communication Critical Thinking

Directions

Your instructor will arrange for you to visit an electronic prepress equipment vendor and talk with the owner/operator about the cost of hardware and software required for the operation. Make three copies of the following EPP system checklist and compare three systems, using the checklist as a guideline for system configuration. Include acquisition costs where they are appropriate.

Electronic Prepress System Configuration **Cost**

1. Type of computer $ __________
   - ☐ Apple Macintosh
   - ☐ PC/Windows Platform
   - ☐ Other ____________________
2. Size of processor $ __________
   - ☐ Mac 801, 803 or 804
   - ☐ Power Mac G3 ☐ Power Mac G4
   - ☐ Pentium II ☐ Pentium III ☐ Celeron
   - ☐ Other ____________________
3. Amount of RAM (32MB, 64MB, 128MB, etc.) ________ MB $ __________
4. Size of hard drive (4GB, 10GB, etc.) ______________ $ __________
5. Floppy Drive? If so, what capacity? ______________ $ __________
6. Type of keyboard $ __________
   - ☐ Enhanced ☐ 101 ☐ 104 ☐ 107
   - ☐ Ergonomic ☐ 101 ☐ 104 ☐ 107
   - ☐ USB ☐ 104 ☐ 107
   - ☐ Standard
   - ☐ Other ____________________
7. Type of monitor ____________________ $ __________
   - ☐ Brand and size ____________________

Assignment Sheet 4

8. Type of mouse ____________________ $ __________
Ergonomic, two-button Two-button/track ball
Macintosh, one-button Graphics tablet
Other ____________________

9. Type of printer $ __________
Inkjet Laser Imagesetter
DPI/RAM Memory ____________________

10. External Hard Drive Size ________ MB GB $ __________

11. Removable Drive $ __________
Jaz Zip Optical LS120
SyQuest ____________________
Other ____________________

12. Scanner $ __________
Type/Resolution ____________________

TOTAL HARDWARE $ __________

SOFTWARE

13. Operating System $ __________
Windows Windows NT
Macintosh UNIX

14. Word Processing Software $ __________
Brand/Version ____________________

15. Page Layout Software $ __________
QuarkXPress PageMaker InDesign
Other ____________________

16. Illustration/Draw Software $ __________
Illustrator FreeHand CorelDraw
Other ____________________

17. Image-Editing Software $ __________
Photoshop
Other ____________________

18. Paint Software $ __________
Painter
Other ____________________

19. Additional Software $ __________
Fonts ____________________
Clip Art ____________________
Other ____________________

TOTAL SOFTWARE $ __________

TOTAL INVESTMENT $ __________

Objective 16

Job Sheet 1—Start/Boot the Computer

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	____
• Computer started and monitor turned on properly	____
• Computer shut down and monitor turned off properly	____

Basic Skills

Reading Technology

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Operating-system software manual
- Assignment Sheet 1

Procedure

☐ 1. Start/Boot the computer and turn on monitor according to operating procedures recorded in Assignment Sheet 1.

☐ 2. Check monitor for disk- or system-error messages.

Note: Computer systems vary, but many will display an introductory message and conduct self-tests that notify you of any disk or system errors that may occur during startup.

☐ 3. If errors messages appear, notify the instructor immediately and correct the error(s).

☐ 4. After completing successful startup, exit program to properly close any files, shut down computer and turn off monitor.

Evaluator's Comments: ______________________

____

____

Objective 17

Job Sheet 2—Format a Disk

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• Computer started and monitor turned on properly	
• Formatted disk according to system requirements	
• System exited properly	
• Computer shut down and monitor turned off properly	
• Disk stored properly	

Basic Skills

Reading Technology

Introduction

Although many floppy disks today are formatted from the factory, there are still many cases in which a disk must be reformatted. This exercise will give the student experience in this practice.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation with a floppy drive
- Assignment Sheet 1
- Blank floppy disk
- Operating-system manual
- Disk label and pen

Procedure

☐ 1. Start computer and turn on monitor according to operating procedures recorded in Assignment Sheet 1.

☐ 2. Format blank diskette according to operating procedures recorded in Assignment Sheet 1.

☐ 3. Remove (eject) formatted floppy disk from computer.

☐ 4. Write your name on the label and indicate if formatted for a Macintosh or a PC.

☐ 5. Attach label to formatted disk and store disk properly.

☐ 6. Exit programs properly to close any files.

☐ 7. Shut down computer and turn off monitor properly.

Evaluator's Comments: ______________________________

____

____

Objective 18

Job Sheet 3—Back Up a Disk or Other Removable Media

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Computer started and monitor turned on properly	______
• Files backed up according to system requirements	______
• Disk/removable media labeled correctly	______
• Computer shut down and monitor turned off properly	______
• Disk/removable media stored properly	______

Basic Skills

Reading Technology

Introduction

This exercise will lead the student through the procedure of backing up a floppy disk or other type of removable media such as a Zip disk, Jaz disk, etc. It is very important to back up disks frequently when working on a project in case something happens to the original disk.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Floppy disk drive and/or removable storage device
- Assignment Sheet 1
- Blank disk and/or other type of removable media
- Disk and/or other type of removable media containing a file, provided by instructor
- Disk label and pen

Procedure

☐ 1. Start computer according to operating procedures recorded in Assignment Sheet 1.

☐ 2. Your instructor will provide you with a disk or other type of removable media containing one or more files. Back up the disk/removable media; follow operating procedures recorded in Assignment Sheet 1.

☐ 3. Remove disk/media from computer or storage device and attach label to backup disk.

☐ 4. Store disks properly.

☐ 5. Shut down computer and turn off monitor properly.

Evaluator's Comments: ____________________

____

____

25..

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2—Practice Using Publication-Window Features 3–35
3—Practice Using Page-Specification Features 3–45
4—Practice Using Paragraph- and Type-Specification Features and Flow Text 3–51
5—Create, Edit, and Move a Headline 3–61
6—Place a File and Then Edit and Move Sentences Within File Paragraphs 3–63
7—Copy/Paste, Cut/Paste, and Move a Paragraph 3–69
8—Create a Letterhead 3–75

Objective Sheet

Unit Objective

After completing this unit, the student should be able to identify software used in EPP systems and use page-layout software to perform basic layout functions. The student should demonstrate these competencies by completing the assignment sheets and job sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to EPP software with their definitions.
2. Match types of software used in EPP systems with their uses.
3. List factors to consider before purchasing EPP software.
4. List characteristics of quality word-processing software.
5. Select true statements concerning characteristics of quality illustration software.
6. Complete statements concerning characteristics of quality image-editing software.
7. Select true statements concerning characteristics of quality preflight software.
8. List characteristics of quality page-layout software.
9. Match basic page-layout software features with their descriptions.
10. Match basic page-layout software text-tool operations with their definitions.
11. Match page-setup features with their descriptions.
12. Match paragraph-specification features with their descriptions.
13. Define type-specification features.
14. Describe editing features.
15. Describe the problems encountered when using office software for print production.
16. Evaluate a page-layout software package. (Assignment Sheet 1)
17. Examine page-layout software manual for basic operations. (Assignment Sheet 2)

18. Create word-processed document. (Job Sheet 1)
19. Practice using publication-window features. (Job Sheet 2)
20. Practice using page-specification features. (Job Sheet 3)
21. Practice using paragraph- and type-specification features and flow text. (Job Sheet 4)
22. Create, edit, and move a headline. (Job Sheet 5)
23. Place a file and then edit and move sentences within file paragraphs. (Job Sheet 6)
24. Copy/paste, cut/paste, and move a paragraph. (Job Sheet 7)
25. Create a letterhead. (Job Sheet 8)

Information Sheet

Objective 1

Terms and definitions

a. **Clip art**—Electronically stored artwork that can be inserted into a document during page layout

b. **Customizing**—Arranging elements of design and type to meet specifications

c. **Dialog box**—Area in publication window that requests information or shows status of a process taking place

d. **Dictionary**—Computerized listing of words that is used to check spelling and suggest hyphenation

e. **Global selection**—Process that searches and/or applies an attribute or feature to an entire document

f. **Handles**—Boundaries around a graphic image or text block indicating it has been selected

g. **Import**—To load a document or graphics file from one source to another

h. **Mouse-driven software**—Software that performs functions based upon operator's selections from menus

i. **Palette**—A window that holds tools, colors, patterns, or styles

j. **Text block**—Unit of text that can be broken into smaller units, consolidated with other units, or moved

Objective 2

Types of software used in EPP systems

a. Operating system—Software used to tell computer how to manipulate information and run various programs

Examples: Macintosh OS, Windows 95 or 98, Windows NT

b. Word-processing—Software used to create or revise text

Examples: Microsoft Word, Corel WordPerfect

c. Illustration—Software used to create graphics

Examples: Adobe Illustrator, Macromedia FreeHand

d. Image-editing—Software used to edit or change a photographic image

Example: Adobe Photoshop

e. Page-layout—Software used to arrange and manipulate text and graphics

Examples: QuarkXPress, Adobe PageMaker, Adobe InDesign

f. Font-management—Software used to consistently and reliably handle all of the fonts on a computer

Examples: Adobe Type Manager Deluxe, Extensis Suitcase, Alsoft MasterJuggler

g. Preflight—Software used to check page-layout files for potential output problems; checks colors, fonts, and images; generates a report detailing any problems

Examples: Markzware FlightCheck, Extensis PreflightPro

Objective 3

Factors to consider before purchasing EPP software

a. Can software efficiently produce types of publications desired?

b. Is software compatible with existing hardware or hardware to be purchased?

Note: Compatibility with existing hardware or hardware to be purchased is an important criterion to consider. Many experts suggest that consumers determine the type of software they intend to use before purchasing equipment. Because software is expensive, software purchases should be made with the same amount of attention to detail as equipment purchases.

c. Will software utilize computer's and printer's total capabilities?

d. Is the computer's RAM memory sufficient to operate software?

e. Is software compatible with existing software?

f. Is software mouse-driven?

g. Does software provide error messages?

h. Does software supply thorough yet easy-to-understand documentation?

Note: The documentation provided with the software should include step-by-step instructions, a tutorial, a list of features and commands, and ample examples that illustrate the instructions.

i. Does software provide technical support at no or low cost?

j. Can software be upgraded, or can upgrades be obtained in the future?

k. Is software competitively priced with programs with similar features?

l. Is software supported by output service providers?

Objective 4

Characteristics of quality word-processing software

Note: The capabilities of word-processing software range from very easy to complex. Determine the features you will use most frequently as the basic criteria for evaluating word-processing packages.

a. Allows input of large amount of text in a convenient, fast, and efficient manner

b. Provides easy access to formatting features, such as setting tabs and margins

c. Provides easy access to editing features, such as moving, copying, inserting, and deleting text

d. Provides a spell-check feature

Note: A spell-check program is a computerized dictionary that checks proper spelling and prompts the operator if a misspelled word is located or if that word is not found in the dictionary.

e. Provides search-and-replace feature for words, letters, numbers, and phrases

Note: A search-and-replace program searches a document for specific information and replaces it with new information. This feature may allow the operator the option of confirming each replacement or it may automatically replace all information located. The search-and-replace feature is a fast, efficient, and accurate way of making changes in a document.

f. Allows files to be exported in a pure ASCII format

Note: ASCII is an acronym for American Standard Code for Information Interchange. A pure ASCII file does not contain embedded codes.

g. Provides a merge feature

Note: The merge feature is used to individualize documents, such as form letters, by combining the document file with data files, such as names and addresses.

Objective 5

Characteristics of quality illustration software

a. Uses line and curve segments to produce object-oriented graphics

b. Provides the capability of resizing images without affecting their original form

c. Can produce three-dimensional drawings

d. Allows files to be exported into page-layout software

e. Is able to apply text

f. Allows multiple objects to be grouped

g. Allows for graphics to be rotated, scaled, reflected, and skewed

h. Imports graphics for tracing

i. Wraps text around graphic elements

j. Allows text to be converted to paths

k. Provides tools and filters for creating blends and masks

l. Allows style sheets to be defined, modified, duplicated, and removed

m. Provides printing functions allowing graphics to be color separated, tiled, and scaled

Objective 6

Characteristics of quality image-editing software

a. Provides for calibration of monitor for color accuracy between images and output devices

b. Allows photographic images to be modified using painting and editing tools

c. Imports graphics from various sources, such as illustration software, scanning software, or electronic media

d. Provides tools for color correction and photo retouching

e. Provides editing tools for creating and modifying selections using filters, masks, channels, and layers

f. Provides tools for image selection, such as the pen tools and magic wand

g. Provides for image mode conversions, including grayscale, CMYK, RGB, indexed color, duotones, and bitmap formats

h. Allows images to be exported in a wide variety of formats for electronic and printed distribution

i. Allows files to be saved in various formats permitting file sharing between applications

j. Provides printing functions for color output and film separation

k. Allows for image editing using filters, such as blur, stylize, sharpen, render, and distort

l. Provides palette for creation of multiple layers that can be reordered, saved, or copied between documents

m. Provides editing features including scaling, rotating, reflecting, and cropping

n. Allows for adjustment of photographic images using hue and saturation, levels and curves, and alpha channels

Objective 7

Characteristics of quality preflight software

a. Provides a font check that inspects documents for missing screen and printer fonts, fonts affected by typestyle menus, and fonts used in embedded graphics

b. Provides an image check that inspects documents for missing graphic files and inappropriate graphic file formats

c. Provides a color check that inspects documents for unused spot colors; ensures that colors have been defined and named correctly

d. Generates a report document that details all potential prepress problems

Objective 8

Characteristics of quality page-layout software

Note: The capabilities of page-layout software range from very easy to complex. Determine the features you will use most frequently as the basic criteria for evaluating page-layout software.

a. Provides templates or outlines for arranging text and graphics

b. Imports text and graphics from various sources, such as word processing, illustration, or image-editing software

c. Allows text and graphics to be moved (together or separately) to fit available space

d. Provides text-editing features, such as cut, copy, and paste

Note: Although page-layout programs should provide some basic text-editing features, most initial inputting and any extensive editorial changes should be performed in the word-processing software rather than in the page-layout software. To facilitate this, some page-layout programs have a built-in word-processing program.

e. Provides features for customizing paragraphs, typestyles, and type sizes throughout document

f. Provides features for adding graphic elements, such as lines, boxes, and circles

g. Provides pull-down menus accessed by mouse or mouse/keystroke combinations

h. Allows multiple pages to be inserted, moved, and deleted

i. Provides text wrap or runaround features

j. Provides advanced text editing features, such as spell check, hyphenation and justification, tracking and kerning tables, and auxiliary dictionaries

k. Allows style sheets to be created that include features such as rules, tabs, paragraph settings, and type attributes

Objective 9

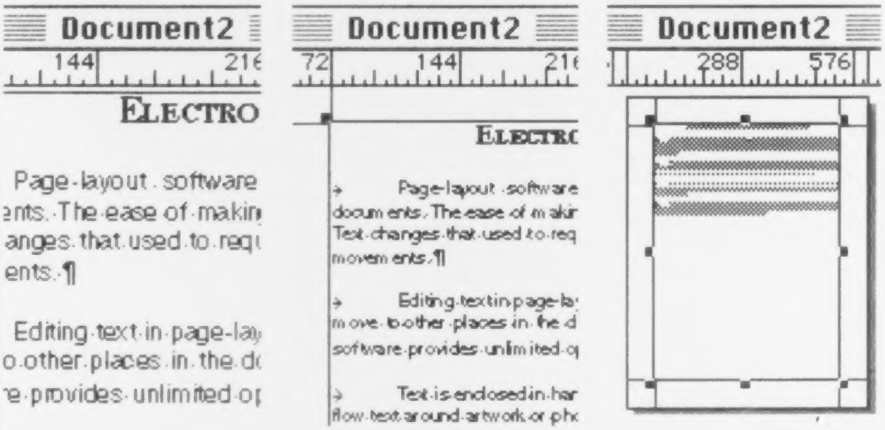
Basic page-layout software features

Note: As you study objectives 9 through 13, view the various page-layout specification features described in these objectives on your computer screen using the page-layout software available on-site.

a. **Publication-window size selection**—Options providing a variety of window views selected according to amount of detail needed to be seen for a particular task

Figure 1—Size-selection options

Actual size (100%) | 75% | Fit in window



Page·layout· software
ents.·The·ease·of·makin
anges·that·used·to·requ
ents.·¶

Editing·text·in·page-lay
o·other·places·in·the·do
e·provides·unlimited·op

Page-layout·software
documents.·The·ease·of·makir
Text·changes·that·used·to·req
movements.·¶

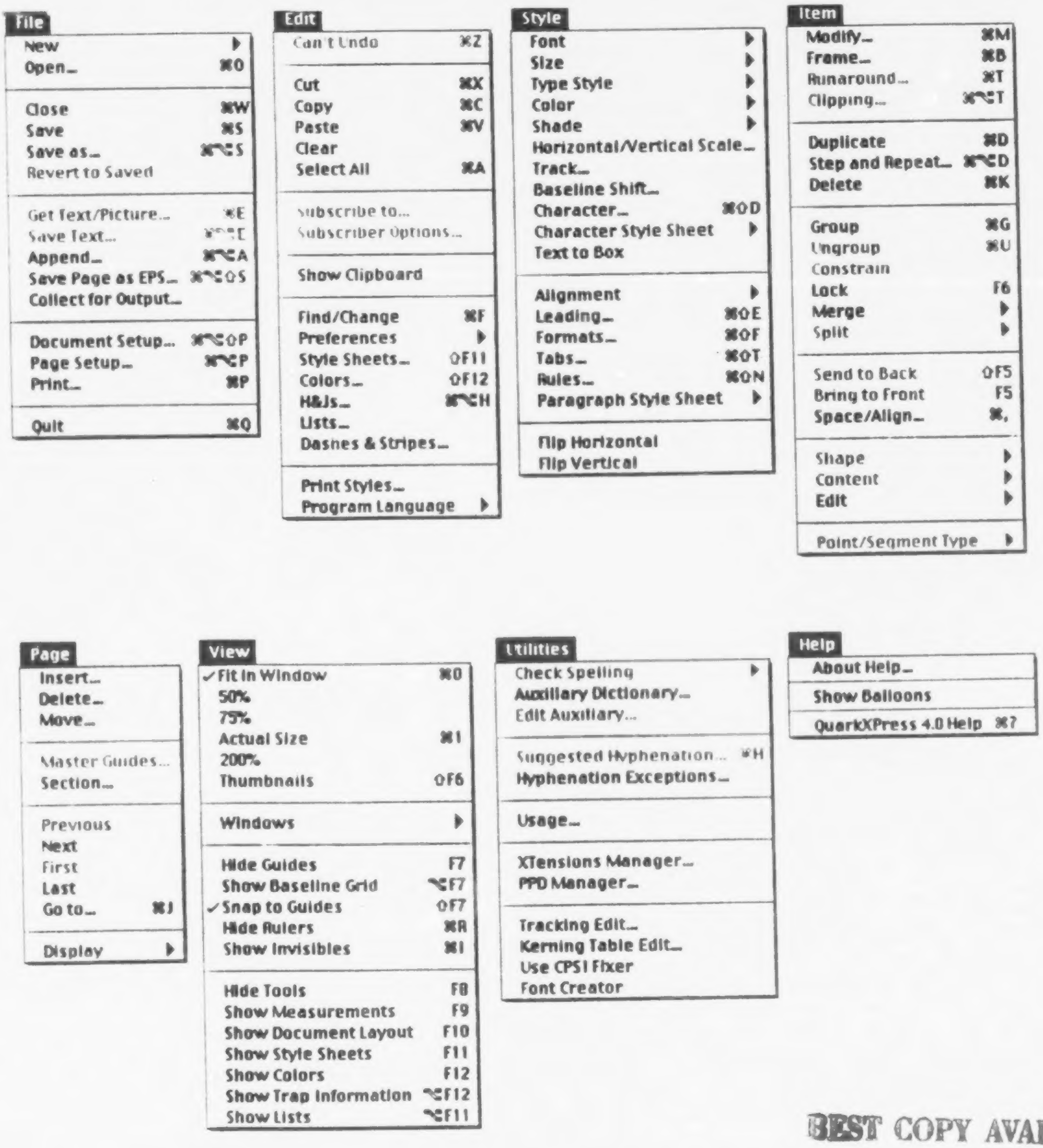
Editing·text·in·page-la
move·to·other·places·in·the·d
software·provides·unlimited·o

Text·is·enclosed·in·har
flow·text·around·artwork·or·pho

b. **Pull-down menus**—Listings of options that drop down when selected by mouse or keystroke

Note: The usual procedure used for pulling down a menu is to drag the mouse until an option is highlighted and then release the mouse to select that option.

Figure 2—Pull-down menus in QuarkXPress


File
New ▶
Open… ⌘O
Close ⌘W
Save ⌘S
Save as… ⌘⌥S
Revert to Saved
Get Text/Picture… ⌘E
Save Text… ⌘⌥E
Append… ⌘⌥A
Save Page as EPS… ⌘⌥⇧S
Collect for Output…
Document Setup… ⌘⌥⇧P
Page Setup… ⌘⌥P
Print… ⌘P
Quit ⌘Q
Edit
Can't Undo ⌘Z
Cut ⌘X
Copy ⌘C
Paste ⌘V
Clear
Select All ⌘A
Subscribe to…
Subscriber Options…
Show Clipboard
Find/Change ⌘F
Preferences ▶
Style Sheets… ⇧F11
Colors… ⇧F12
H&Js… ⌘⌥H
Lists…
Dashes & Stripes…
Print Styles…
Program Language ▶
Style
Font ▶
Size ▶
Type Style ▶
Color ▶
Shade ▶
Horizontal/Vertical Scale…
Track…
Baseline Shift…
Character… ⌘⇧D
Character Style Sheet ▶
Text to Box
Alignment ▶
Leading… ⌘⇧E
Formats… ⌘⇧F
Tabs… ⌘⇧T
Rules… ⌘⇧N
Paragraph Style Sheet ▶
Flip Horizontal
Flip Vertical
Item
Modify… ⌘M
Frame… ⌘B
Runaround… ⌘T
Clipping… ⌘⌥T
Duplicate ⌘D
Step and Repeat… ⌘⌥D
Delete ⌘K
Group ⌘G
Ungroup ⌘U
Constrain
Lock F6
Merge ▶
Split ▶
Send to Back ⇧F5
Bring to Front F5
Space/Align… ⌘,
Shape ▶
Content ▶
Edit ▶
Point/Segment Type ▶
Page
Insert…
Delete…
Move…
Master Guides…
Section…
Previous
Next
First
Last
Go to… ⌘J
Display ▶
View
✓Fit in Window ⌘0
50%
75%
Actual Size ⌘1
200%
Thumbnails ⇧F6
Windows ▶
Hide Guides F7
Show Baseline Grid ⌥F7
✓Snap to Guides ⇧F7
Hide Rulers ⌘R
Show Invisibles ⌘I
Hide Tools F8
Show Measurements F9
Show Document Layout F10
Show Style Sheets F11
Show Colors F12
Show Trap Information ⌥F12
Show Lists ⌥F11
Utilities
Check Spelling ▶
Auxiliary Dictionary…
Edit Auxiliary…
Suggested Hyphenation… ⌘H
Hyphenation Exceptions…
Usage…
XTensions Manager…
PPD Manager…
Tracking Edit…
Kerning Table Edit…
Use CPSI Fixer
Font Creator
Help
About Help…
Show Balloons
QuarkXPress 4.0 Help ⌘?

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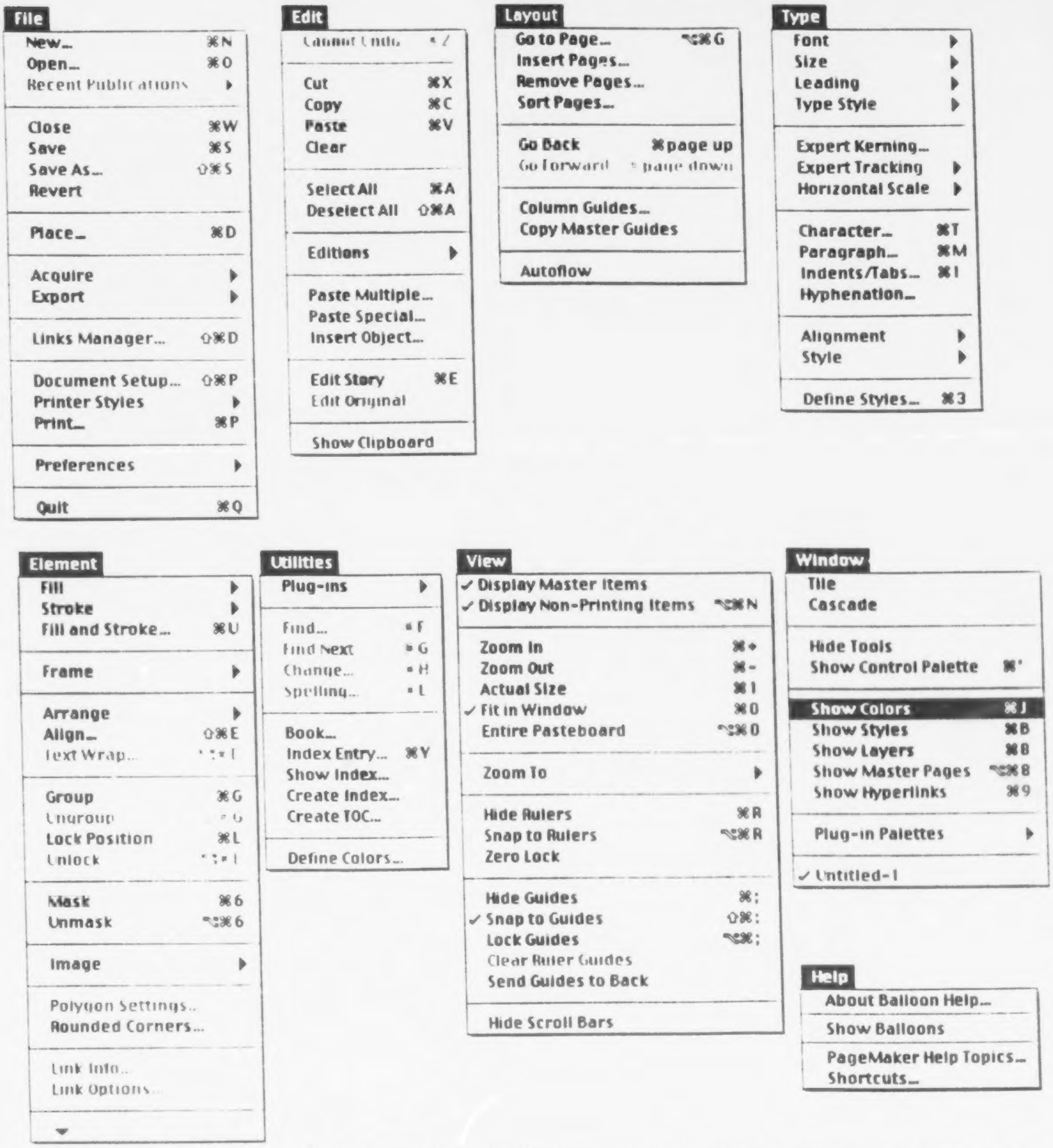
File
New... ⌘N
Open... ⌘O
Recent Publications ▸
Close ⌘W
Save ⌘S
Save As... ⇧⌘S
Revert
Place... ⌘D
Acquire ▸
Export ▸
Links Manager... ⇧⌘D
Document Setup... ⇧⌘P
Printer Styles ▸
Print... ⌘P
Preferences ▸
Quit ⌘Q
Edit
Cannot Undo ⌘Z
Cut ⌘X
Copy ⌘C
Paste ⌘V
Clear
Select All ⌘A
Deselect All ⇧⌘A
Editions ▸
Paste Multiple...
Paste Special...
Insert Object...
Edit Story ⌘E
Edit Original
Show Clipboard
Layout
Go to Page... ⌥⌘G
Insert Pages...
Remove Pages...
Sort Pages...
Go Back ⌘page up
Go Forward ⌘page down
Column Guides...
Copy Master Guides
Autoflow
Type
Font ▸
Size ▸
Leading ▸
Type Style ▸
Expert Kerning...
Expert Tracking ▸
Horizontal Scale ▸
Character... ⌘T
Paragraph... ⌘M
Indents/Tabs... ⌘I
Hyphenation...
Alignment ▸
Style ▸
Define Styles... ⌘3
Element
Fill ▸
Stroke ▸
Fill and Stroke... ⌘U
Frame ▸
Arrange ▸
Align... ⇧⌘E
Text Wrap... ⌥⌘E
Group ⌘G
Ungroup ⇧⌘G
Lock Position ⌘L
Unlock ⌥⌘L
Mask ⌘6
Unmask ⌥⌘6
Image ▸
Polygon Settings...
Rounded Corners...
Link Info...
Link Options...
Utilities
Plug-ins ▸
Find... ⌘F
Find Next ⌘G
Change... ⌘H
Spelling... ⌘L
Book...
Index Entry... ⌘Y
Show Index...
Create Index...
Create TOC...
Define Colors...
View
✓ Display Master Items
✓ Display Non-Printing Items ⌥⌘N
Zoom In ⌘+
Zoom Out ⌘-
Actual Size ⌘1
✓ Fit in Window ⌘0
Entire Pasteboard ⌥⌘0
Zoom To ▸
Hide Rulers ⌘R
Snap to Rulers ⌥⌘R
Zero Lock
Hide Guides ⌘;
✓ Snap to Guides ⇧⌘;
Lock Guides ⌥⌘;
Clear Ruler Guides
Send Guides to Back
Hide Scroll Bars
Window
Tile
Cascade
Hide Tools
Show Control Palette ⌘'
Show Colors ⌘J
Show Styles ⌘B
Show Layers ⌘8
Show Master Pages ⌥⌘8
Show Hyperlinks ⌘9
Plug-in Palettes ▸
✓ Untitled-1
Help
About Balloon Help...
Show Balloons
PageMaker Help Topics...
Shortcuts...

Figure 3—Pull-down menus in Adobe PageMaker

c. **Cursor-position indicators**—Icons and/or markers that appear on rulers and within text to indicate cursor position in publication window

d. **Rulers**—Measuring edges used in placing text and graphics on page in publication window

e. **Scroll bars**—Tools used to move page horizontally and vertically inside publication window

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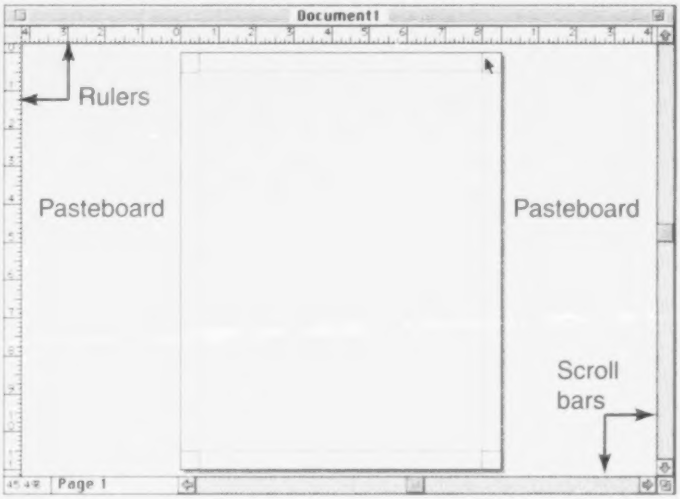
f. **Pasteboard** (clipboard)—Blank space surrounding page in publication window; used to temporarily store text and graphics

Figure 4—Document window showing blank pasteboard


Document1
Rulers
Pasteboard
Pasteboard
Scroll bars
Page 1

g. **Tool box** (function box)—Menu of tools available to point, edit text, crop, or draw

Figure 5a—Adobe PageMaker

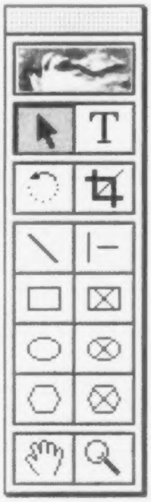
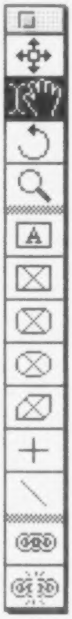


Figure 5b—QuarkXPress



Information Sheet

Objective 10

Basic page-layout software text-tool operations

a. Type text—To input text

b. Edit text—To delete, insert, or rearrange text

c. Cut and paste text—To mark text so that it will be removed from its current position, temporarily stored in the computer's memory, and then retrieved in another position

d. Copy and paste text—To mark text so that it will be left in its current position, while a copy is temporarily stored in the computer's memory, and then retrieved in another position

e. Move or adjust text—To rearrange an area of text that is defined by boundaries

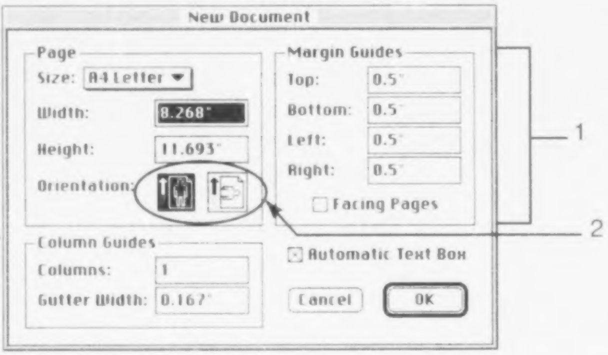
Objective 11

Page-setup features

a. **Margin settings** (see item 1 in Figure 6a and Figure 6b)—Dialog box for setting left (inside), right (outside), top, and bottom page limits

Note: When margins are set, nonprinting guides indicating margin position appear on the page in the publication window.

Figure 6a—New document dialog box in QuarkXPress



New Document

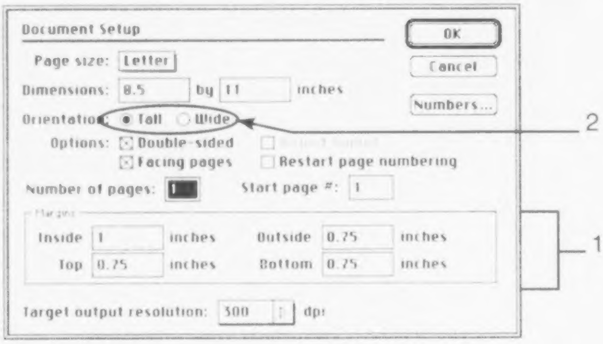
Page
Size: A4 Letter
Width: 8.268"
Height: 11.693"
Orientation:

Margin Guides
Top: 0.5"
Bottom: 0.5"
Left: 0.5"
Right: 0.5"
☐ Facing Pages

Column Guides
Columns: 1
Gutter Width: 0.167"

☒ Automatic Text Box

Figure 6b—New document dialog box in Adobe PageMaker



Document Setup

Page size: Letter
Dimensions: 8.5 by 11 inches
Orientation: ● Tall ○ Wide
Options: ☒ Double-sided ☒ Facing pages ☐ Restart page numbering
Number of pages: 1 Start page #: 1

Margins
Inside 1 inches Outside 0.75 inches
Top 0.75 inches Bottom 0.75 inches

Target output resolution: 300 dpi

b. **Page orientation** (see item 2 in Figure 6a and Figure 6b on previous page)—Dialog box for selecting either portrait (tall) or landscape (wide) page position

Note: Text on a portrait page orientation will be printed from left to right across the width of the page. Text on a landscape page orientation will be printed from left to right across the length of the page.

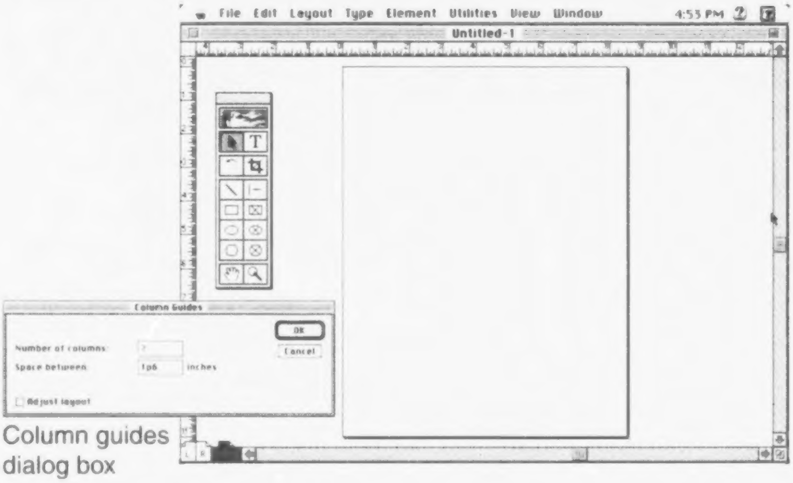
Figure 7a—Portrait

Figure 7b—Landscape

c. **Columns**—Dialog box for creating either equal- or unequal-size column positions and numbers

Note: As the number of columns are defined, nonprinting guides indicating column position appear on the page in the publication window.

Figure 8—Column guides dialog box and publication window with column guides specified in Adobe PageMaker



Number of columns: [illegible]
Space between: 1p6 inches
☐ Adjust layout

Column guides dialog box

d. **Style sheets**—Items that customize a format, such as margins, column widths, border thicknesses, and typestyles

e. **Pagination**—Page numbering within a book or publication

f. **Templates**—Permanent page formats that can be copied and used repeatedly

Note: Templates may be either predesigned as a part of the software program or designed by the user.

Objective 12

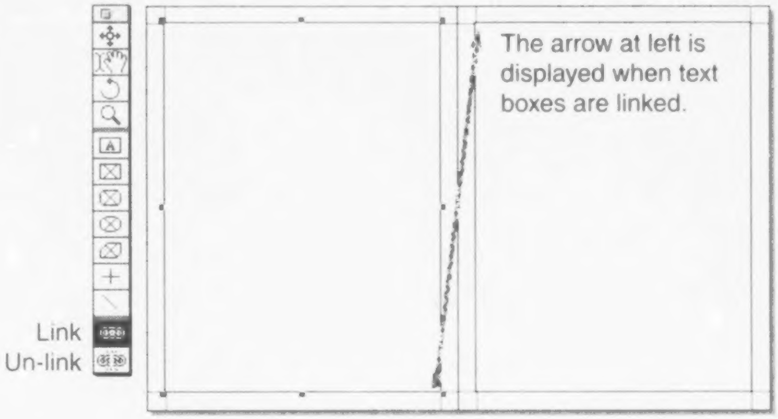
Paragraph-specification features

a. **Text flow**—Option selected to move text from page to page and column to column

b. **Auto text flow**—Option selected to allow text to flow automatically from page to page and column to column when using place-text function

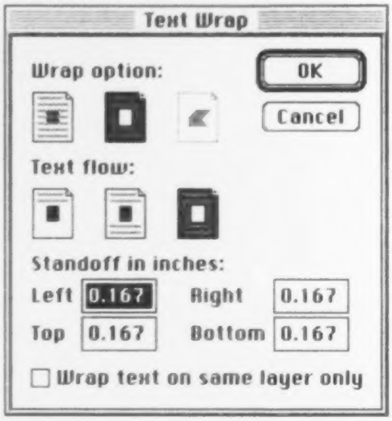
Figure 9a—In Adobe PageMaker this icon indicates auto flowing text one column at a time.

Figure 9b—QuarkXPress automatically flows text between linked text boxes.



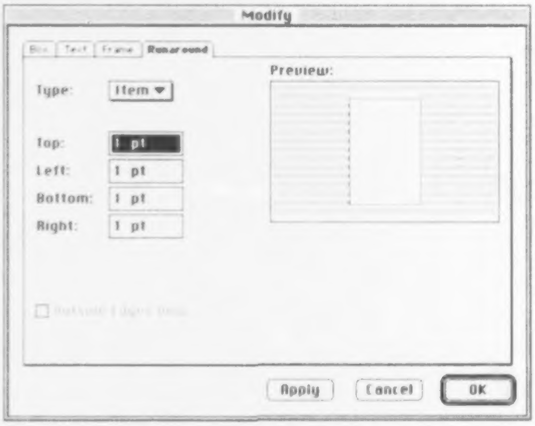
c. **Text wrap/runaround**—Option selected to adjust the placement of text around graphics

Figure 10a—Text wrap dialog box in Adobe PageMaker


Text Wrap
Wrap option:
OK
Cancel
Text flow:

Standoff in inches:
Left 0.167
Right 0.167
Top 0.167
Bottom 0.167
☐ Wrap text on same layer only

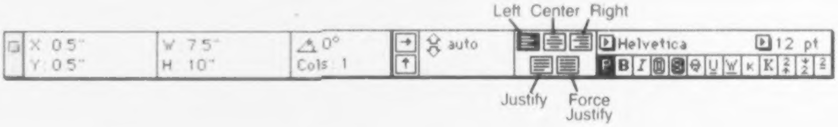
Figure 10b—Runaround dialog box in QuarkXPress


Modify
Box
Text
Frame
Runaround
Preview:
Apply
Cancel
OK

Type: Item
Top: 1 pt
Left: 1 pt
Bottom: 1 pt
Right: 1 pt

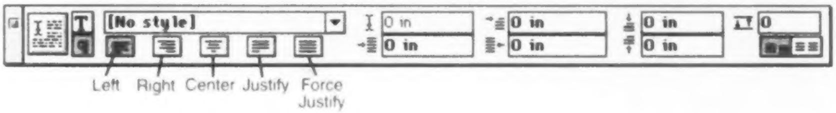
d. **Alignment**—Options selected to position text flush left, flush right, centered, or justified

Figure 11a—Alignment options using the Measurement Palette in QuarkXPress


Left
Center
Right
Justify
Force Justify

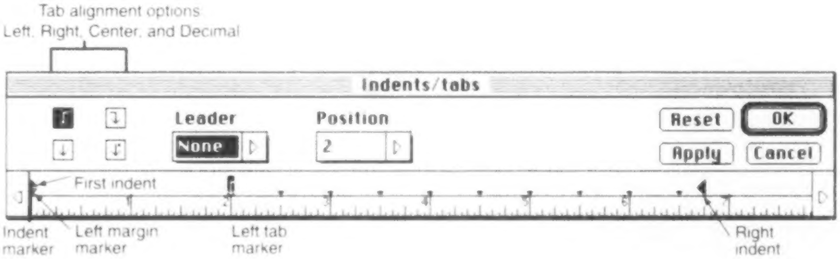
X: 0.5"
Y: 0.5"
W: 7.5"
H: 10"
0°
Cols: 1
auto
Helvetica
12 pt

Figure 11b—Alignment options using the Control Palette in Adobe PageMaker


[No style]
0 in
0 in
0 in
0 in
0 in
0 in
0
Left
Right
Center
Justify
Force Justify

e. **Tabs and indents**—Options selected to align text lines in specific increments left, right, center, decimal, or dot leader

Figure 12—Indent/Tabs in Adobe PageMaker

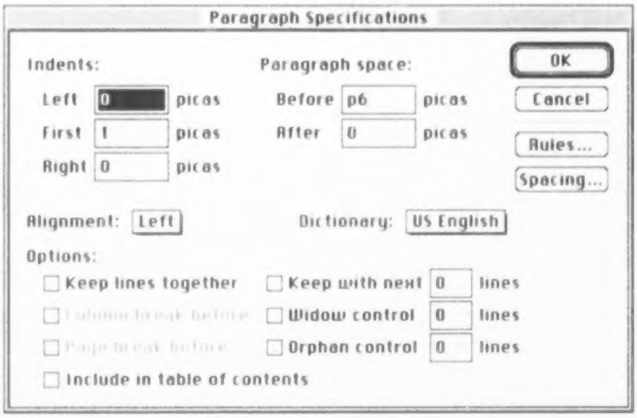

Tab alignment options
Left, Right, Center, and Decimal
Indents/tabs
Reset
OK
Apply
Cancel
First indent
Indent marker
Left margin marker
Left tab marker
Right indent

Leader: None

Position: 2

f. **Paragraph-specifications**—Options selected to make either global or individual changes to a selection including any of the various paragraph-specification features, such as hyphenation, alignment, space before and after, and indents

Figure 13a—Paragraph-specifications dialog box in Adobe PageMaker


Paragraph Specifications
OK
Cancel
Rules...
Spacing...

Indents:

Left 0 picas

First 1 picas

Right 0 picas

Paragraph space:

Before p6 picas

After 0 picas

Alignment: Left

Dictionary: US English

Options:

☐ Keep lines together
☐ Column break before
☐ Page break before
☐ Include in table of contents
☐ Keep with next 0 lines
☐ Widow control 0 lines
☐ Orphan control 0 lines

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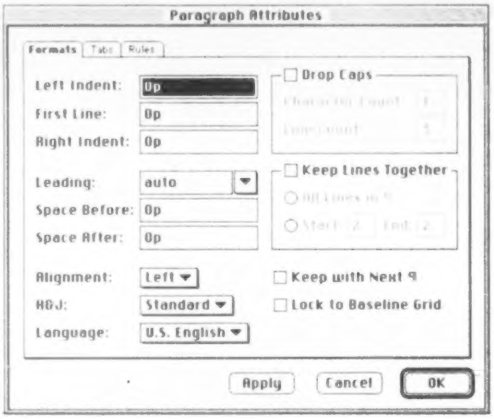
Figure 13b—Paragraph-attributes dialog box in QuarkXPress



Paragraph Attributes

Formats | Tabs | Rules

Left Indent: 0p

First Line: 0p

Right Indent: 0p

Leading: auto

Space Before: 0p

Space After: 0p

Alignment: Left

H&J: Standard

Language: U.S. English

☐ Drop Caps

☐ Keep Lines Together

☐ Keep with Next ¶

☐ Lock to Baseline Grid

Apply | Cancel | OK

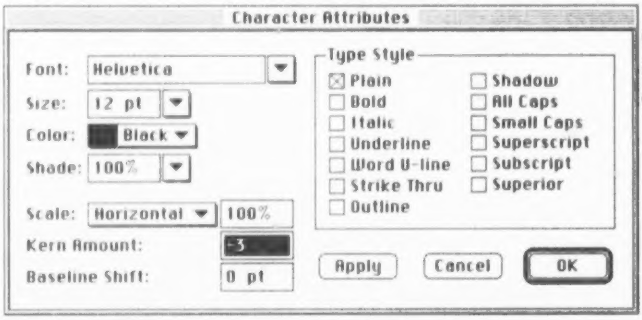
Objective 13

Type-specification features

a. **Hyphenation**—Option allowing dictionary- or operator-prompted word division at end of text lines

b. **Kerning**—Option allowing automatic or manual adjustment of spacing between text characters

Figure 14—Kerning options in QuarkXPress



Character Attributes

Font: Helvetica

Size: 12 pt

Color: Black

Shade: 100%

Scale: Horizontal 100%

Kern Amount: -3

Baseline Shift: 0 pt

Type Style

☒ Plain

☐ Bold

☐ Italic

☐ Underline

☐ Word U-line

☐ Strike Thru

☐ Outline

☐ Shadow

☐ All Caps

☐ Small Caps

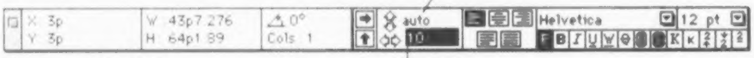
☐ Superscript

☐ Subscript

☐ Superior

Apply | Cancel | OK

Character attributes dialog box



Measurement palette

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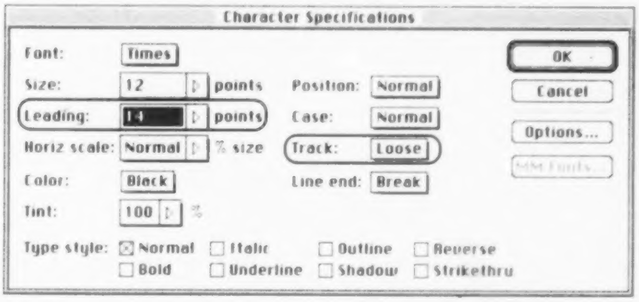
c. **Tracking** (see Figure 15)—Option allowing adjustment of letter and word spacing within paragraph or selection

d. **Leading** (see Figure 15)—Option allowing automatic or manual adjustment of vertical spacing between text lines

Figure 15—Tracking and leading options in Adobe PageMaker



Character specifications dialog box

Character Specifications

Font: Times

Size: 12 points

Leading: 14 points

Horiz scale: Normal % size

Color: Black

Tint: 100 %

Position: Normal

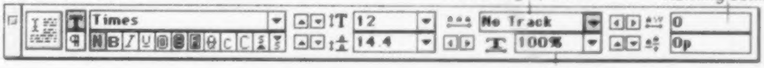
Case: Normal

Track: Loose

Line end: Break

Type style: ☒ Normal ☐ Italic ☐ Outline ☐ Reverse ☐ Bold ☐ Underline ☐ Shadow ☐ Strikethru

Control palette



Times

12

14.4

No Track

100%

0

0p

e. **Type-specification changes**—Options allowing global or manual adjustment of typefaces and type sizes

Objective 14

Editing features

a. Text tool—Options used to insert or delete text or change type specifications

b. Undo command—Options used to restore deleted material

c. Clipboard—Options used to temporarily store graphics or text that was cut or copied

d. Page changes—Options used to insert, delete, or rearrange text or graphics on page in publication window

Objective 15

Problems encountered when using office software for print production

Note: There are many software programs available for producing page layouts; however, it is important to understand that files created with some of these programs cannot be sent to service providers. We have divided software into two groups: Office Software and Electronic Prepress Software. Office software is intended to be output to laser printers not high-end output devices found at print shops. Sophisticated electronic prepress software must be used to send files to service providers.

Office Software	Electronic Prepress Software
Output: Laser	**Output:** Laser and high-end devices
Word Processing/Page Assembly	**Page-Layout**
Microsoft Word	Adobe PageMaker
Corel WordPerfect	Adobe InDesign
Microsoft Publisher	QuarkXPress
Illustration/Paint	**Illustration**
MacPaint	Adobe Illustrator
Microsoft Paint	Macromedia Freehand

a. Service provider support—Office software may not be supported by service bureaus. When accepting office software, service providers cannot guarantee final output since the software used is not a supported industry standard. Electronic prepress software is the industry standard and thus is supported by output service providers. This software has the widest user base, highest number of trained operators, and the highest rate of output success.

b. Color models—Office software may not include color models for standard printing inks including CMYK and Pantone.

c. Trapping—Office software may not include options for color trapping.

d. Features—Office software is created for low-end output devices and thus does not provide many of the features and options necessary to create a document for printing production.

Student Supplement 1—Examples of Page-Layout Specification Features

1. Text wrap or runaround

Figure 1

When an activity involving reading is identified, the corresponding icon is placed on the assignment sheet and job sheet. Skills training is further defined by classifying specific skills that are required to complete the exercise.

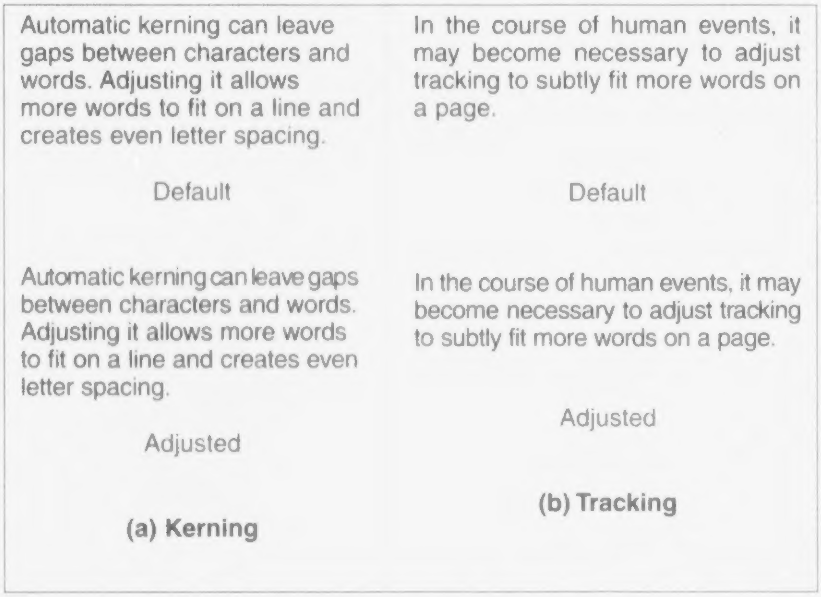
2. Alignment

Figure 2

This is an example of left alignment. You should notice that the text lines up on the left.	This is an example of right alignment. You should notice that the text lines up on the right.	This is an example of center alignment. You should notice that the text is centered.	This is an example of justified alignment. Notice that the text is spread across the box.
Align left	Align right	Align center	Justify

3. Kerning and tracking

Figure 3



Automatic kerning can leave gaps between characters and words. Adjusting it allows more words to fit on a line and creates even letter spacing.

Default

Automatic kerning can leave gaps between characters and words. Adjusting it allows more words to fit on a line and creates even letter spacing.

Adjusted

(a) Kerning

In the course of human events, it may become necessary to adjust tracking to subtly fit more words on a page.

Default

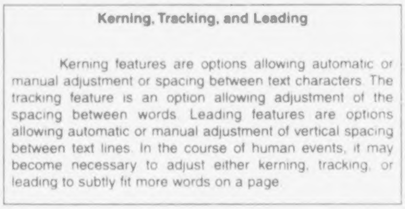
In the course of human events, it may become necessary to adjust tracking to subtly fit more words on a page.

Adjusted

(b) Tracking

4. Leading

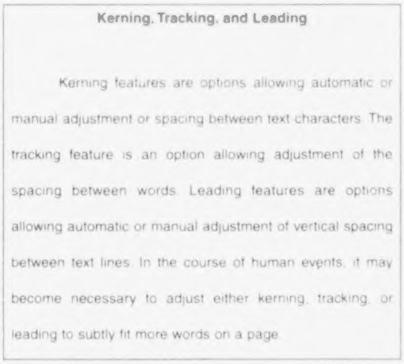
Figure 4



Kerning, Tracking, and Leading

Kerning features are options allowing automatic or manual adjustment or spacing between text characters. The tracking feature is an option allowing adjustment of the spacing between words. Leading features are options allowing automatic or manual adjustment of vertical spacing between text lines. In the course of human events, it may become necessary to adjust either kerning, tracking, or leading to subtly fit more words on a page.

Default



Kerning, Tracking, and Leading

Kerning features are options allowing automatic or manual adjustment or spacing between text characters. The tracking feature is an option allowing adjustment of the spacing between words. Leading features are options allowing automatic or manual adjustment of vertical spacing between text lines. In the course of human events, it may become necessary to adjust either kerning, tracking, or leading to subtly fit more words on a page.

Adjusted

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Objective 16

Assignment Sheet 1—Evaluate a Page-Layout Software Package

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Student displayed ample effort to reveal understanding	______
• Questionnaire completed correctly	______

Basic Skills

Reading Writing Critical Thinking

Materials list

- Page-layout software manual and documentation

Directions

Select a page-layout software package. Review its accompanying documentation and literature, and then complete the checklist below. Decide whether the software is best suited for simple or complex EPP applications and explain your decision on the blanks provided.

Name of software ______________________________

Evaluation checklist

	Yes	No
Menus		
accessible by mouse	______	______
accessible by keystroke	______	______
Cursor-position indicators		
on rulers	______	______
within text	______	______
Rulers		
available both on and off screen	______	______
have ability to change increments	______	______
Pasteboard	______	______
Window resizing	______	______

Assignment Sheet 1

	Yes	No
Text tools		
cut		
paste		
move		
insert		
delete		
Undo command		
Columns		
equal		
unequal		
text adjusted if column size changes		
Text flow		
from page to page		
around graphics		
Page changes		
insert and delete		
rearrange		
Style sheets		
Spell check		
Search and replace		
automatic		
manual		
Hyphenation		
dictionary-assisted		
operator-prompted		
Kerning		
automatic		
adjustable settings		
manual		
Leading		
automatic		
adjustable		
Type-specification changes		
global		
individual		
Paragraph-specification changes		
global		
individual		

	Yes	No
Tabs and indents		
automatic		
manual		
Page orientation		
portrait		
landscape		
Pagination		
automatic		
manual		
Graphics		
lines		
circles		
boxes		
rectangles		
polygons		
Graphics and manipulation		
shading		
cropping		
scaling		
rotation		
skewing		

Decide whether the software package you evaluated in the checklist above is best suited for simple or complex EPP applications. (Circle the response below.)

Simple Complex

Explain your decision on the blanks provided below.

Objective 17

Assignment Sheet 2—Examine Page-Layout Software Manual for Basic Operations

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Instructions were recorded correctly	______

Basic Skills

Reading Writing

Directions

Examine the page-layout software manual for the software used on-site. Read the instructions for the following operations and record the instructions for those operations on the blank lines provided below.

1. Create a file ______________________

2. Open a file ______________________

3. Close a file ______________________

Assignment Sheet 2

4. Save a file

5. Set margins

6. Set tabs and indents

7. Type text

8. Edit text

9. Cut and paste text

10. Copy and paste text ____________________

11. Move or adjust text ____________________

12. Change type size ____________________

13. Change font ____________________

14. Add character style attributes (bold, underline, small caps, etc.) __________

15. Align text (left, right, center, justified) ______________________

16. Set up columns (equal and unequal) ______________________

Objective 18

Job Sheet 1—Create Word-Processed Document

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Computer and printer turned on properly	______
• Text entered properly	______
• File saved and printed	______
• Quit software and exited system properly	______
• Computer shut down and monitor turned off properly	______

Basic Skills

Reading Technology

Introduction

This exercise will lead the student through the use of a word processing program to create a file and save it.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Word-processing software
- Removable media such as floppy disk, Zip disk, etc. (Optional)
- Printer
- Unit 2, Assignment Sheet 1
- Unit 3, Assignment Sheet 2

Procedure

Note: The steps in this procedure should be modified to comply with the word-processing software and EPP equipment available.

☐ 1. Boot computer according to operating procedures recorded in Unit 2, Assignment Sheet 1.

☐ 2. Turn on printer.

☐ 3. Open word-processing software.

☐ 4. Create new file, completing document setup, if required.

☐ 5. Enter the following text.

> Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.
>
> Editing text in page-layout software is simple. It is important to follow each step carefully. Sentences can be moved within paragraphs or to other places in the document. Entire paragraphs can be rearranged with ease.

☐ 6. Save file and store on hard drive or removable media, such as a floppy disk or Zip disk.

Note: Be sure to save the file using a format that can be imported into page-layout software at a later time. For example, if you are going to import the word-processed file into a QuarkXPress document, save the file in a *text only* format.

☐ 7. Print document and write your name and "Job Sheet 1—Job 1" at top of printed page.

☐ 8. Close file and exit word-processing software.

☐ 9. Shut down computer.

☐ 10. Submit Job 1 to your instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 19

Job Sheet 2—Practice Using Publication-Window Features

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Publication-window view-size questions answered correctly	______
• Scrolling actions described correctly	______
• Pasteboard movements described correctly	______
• Ruler-measurement questions answered correctly	______

Basic Skills

Reading Writing Technology

Introduction

This exercise gives students the opportunity to practice fundamental skills needed to begin using page-layout software. Manipulating the publication-window features is the beginning of taking advantage of the flexibility of these programs.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open page-layout program.

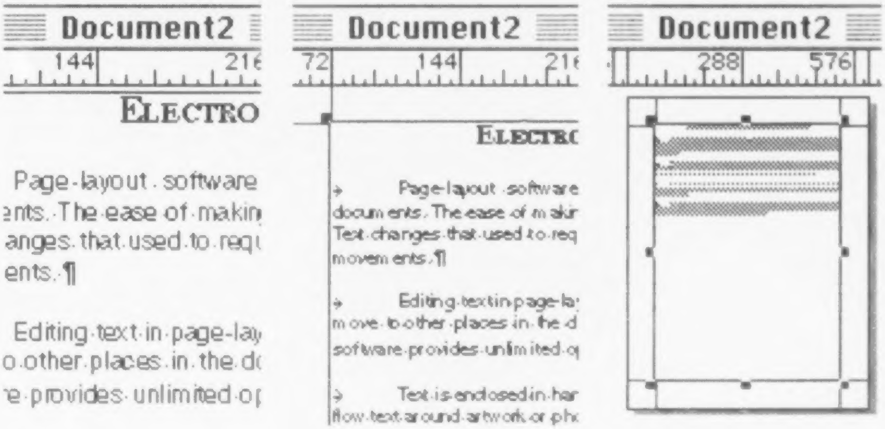
☐ 3. Create a new file and do initial setup.

☐ 4. Set up a blank page with two equal columns.

☐ 5. **Change publication-window view size**

Note: The publication window can be adjusted to show a page in a variety of sizes, for example, reduced, 100%, or enlarged. See Figure 1.

Figure 1—Size-selection options



Actual size (100%)

ELECTRO

Page·layout·software
ents.·The·ease·of·makin
anges·that·used·to·requ
ents.·¶

Editing·text·in·page-lay
o·other·places·in·the·do
e·provides·unlimited·op

75%

ELECTRC

→ Page-layout·software
documents.·The·ease·of·makir
Text·changes·that·used·to·req
movements.·¶

→ Editing·text·in·page-la
move·to·other·places·in·the·d
software·provides·unlimited·o

→ Text·is·enclosed·in·har
flow·text·around·artwork·or·ph

Fit in window

☐ a. Practice selecting view sizes until you can easily move from one view size to the other.

☐ b. Use 12-point type to type the text below.

Practice using the publication-window features.

☐ c. Select the smallest reduced view size available and then complete worksheet items 1 and 2 in Section A of the worksheet that follows this job sheet.

☐ d. Select the largest enlarged view size available and then complete worksheet items 3 and 4 in Section A of the worksheet that follows this job sheet.

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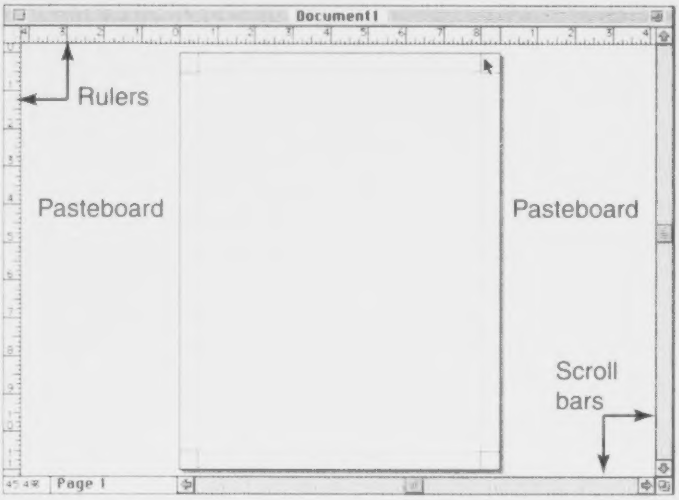
☐ 6. **Use scroll bars to move page**

Note: The page may be moved horizontally or vertically using the scroll bar. The scroll bar(s) may appear on an edge of the publication window. Clicking the arrows or dragging the bars moves the page. See Figure 2.

Figure 2—Scroll bars and pasteboard



- ☐ a. Use scroll bar to move page horizontally in publication window.
- ☐ b. Use scroll bar to move page vertically in publication window.
- ☐ c. Complete worksheet items 1 and 2 in Section B of the worksheet that follows this job sheet.

☐ 7. **Use pasteboard (clipboard)**

Note: The pasteboard is the area that surrounds the page in the publication window. See Figure 2. Use the pasteboard as an area to store graphics and text temporarily while arranging the page.

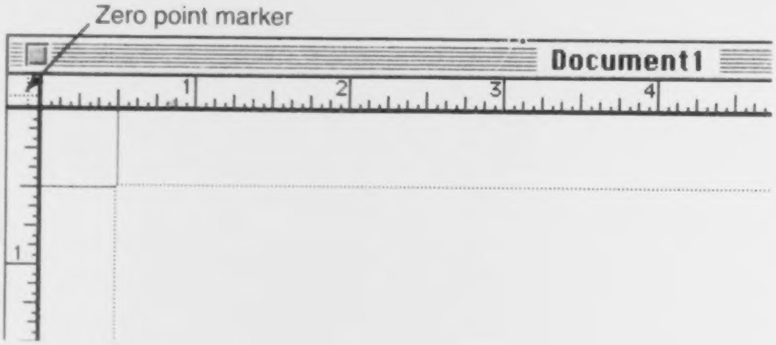
- ☐ a. Move the previously typed text to the pasteboard.
- ☐ b. Move text from pasteboard to page.
- ☐ c. Practice entering and moving text from pasteboard to page.
- ☐ d. Complete worksheet items 1 through 3 in Section C of the worksheet that follows this job sheet.

☐ 8. **Use rulers**

Note: Rulers border the publication window to assist in positioning text and graphics on the page. The rulers intersect at a zero point for accurate measurement of the page from edge to edge. The zero point is generally set at the top-left outside edge of the page (not the margins). See Figure 3. The cursor position or pointer-tool position may be shown on both the horizontal and vertical ruler.

The units of measure on the rulers vary, but usually include inches, points, picas, or millimeters. The tick marks indicating the unit of measure may change when the page view changes. A reduced view may have fewer tick marks than an enlarged view, which requires more tick marks for greater accuracy.

Figure 3



- ☐ a. Select various page-view sizes and observe changes in tick marks.
- ☐ b. Select various measures from rules feature, if available, and observe how they are displayed on the rulers.
- ☐ c. Set rulers to display tick marks in inch increments.
- ☐ d. Align previously typed text with the left margin.
- ☐ e. Complete worksheet items 1 through 7 in Section D of the worksheet that follows this job sheet.

☐ 9. Save file using appropriate name.

☐ 10. Close file, quit the page-layout software, and turn off computer.

☐ 11. Submit the worksheet for Job Sheet 2 to your instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

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Worksheet for Job Sheet 2

Name ______________________________

A. Change publication-window size

After selecting the smallest reduced view size available:

1. Are the typed words legible on the display? (Circle the appropriate answer below.)

   Yes No

2. Describe the characters on the display.

   ____

   ____

   ____

After selecting the largest enlarged view size available:

3. Are the typed words legible on the display? (Circle the appropriate answer below.)

   Yes No

4. Write down any words that can be easily viewed.

   ____

   ____

   ____

B. Use scroll bars to move page

1. Describe the action necessary to move the page upward in the publication window.

   ____

   ____

   ____

2. Describe the action necessary to move the page right in the publication window.

C. **Use pasteboard (clipboard)**

1. Does the page-layout software in use at the present time have a pasteboard or clipboard feature? (Circle the appropriate answer below.)

   Yes No

2. Describe the actions necessary to move text to the pasteboard.

3. Describe the actions necessary to move text from the pasteboard to the page.

D. **Use rulers**

1. What is the position of the left edge of the paper on the ruler?

2. What is the position of the right edge of the paper on the ruler?

3. What is the position of the left margin on the ruler?

4. What is the position of the right margin on the ruler?

5. What is the position of the first typed character on the ruler?

____

6. What is the position of the last typed character on the ruler?

____

7. What is the exact measurement of the typed line?

____

Objective 20

Job Sheet 3—Practice Using Page-Specification Features

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Margin-setting questions answered correctly	______
• Equal columns were created according to specifications and printed example	______
• Unequal columns were created according to specifications and printed example	______

Basic Skills

Reading Writing Technology

Introduction

This exercise gives the student experience in setting margins and columns for later use in text input and EPP projects.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Turn on the printer.

☐ 3. Open page-layout program.

☐ 4. Create a new file.

☐ 5. **Select margin settings**

Note: With most programs, the margin setting features appear in the page-setup menu; however, sometimes they appear as a feature in another menu.

☐ a. Set margin settings to the following specifications:

- Top margin—2″
- Bottom margin—2″
- Left (or inside) margin—0.75″
- Right (or outside) margin—0.75″

☐ b. Complete worksheet items 1 through 3 of the worksheet that follows this job sheet.

☐ 6. **Set up equal columns**

Note: Page-layout software programs differ in the methods used to set up columns. Some programs automatically set up columns of equal size after the margin settings have been defined. Other programs provide an empty page with no column definitions. However columns are set up, page-layout software often calculates the width of all columns based upon the margin settings, number of columns, and the space to be allowed between columns. Nonprinting column guides appear on the page to assist you in arranging text and graphics.

☐ a. Create equal columns using the following specifications:

- Type of columns—Equal
- Number of columns—2
- Space between columns (gutter)—0.5″

Note: Some column guides can be set to act as *magnets* when aligning text and graphics. This feature is sometimes called *snap to guides*, and it can be turned on and off as desired.

☐ b. Type the text in Figure 1 in the left column.

Figure 1

Page-layout software often calculates the width of all columns based upon the margin settings, number of columns, and the space to be allowed between columns.

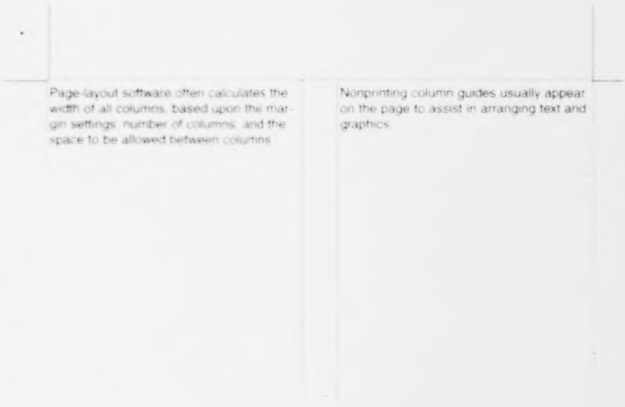
☐ c. Type the text in Figure 2 in the right column.

Note: The page on the display should appear as shown in Figure 3.

Figure 2

> Nonprinting column guides usually appear on the page to assist in arranging text and graphics.

Figure 3



Page-layout software often calculates the width of all columns, based upon the margin settings, number of columns, and the space to be allowed between columns.

Nonprinting column guides usually appear on the page to assist in arranging text and graphics.

☐ d. Print page. Write your name and "Job Sheet 3—Job 1" at the top of the printed page.

☐ 7. **Set up unequal columns**

Note: As with setting up equal columns, methods of establishing unequal columns vary from software to software. Some page-layout software requires you to define equal columns then drag the column guides to create the needed unequal sizes. While in other page-layout programs to create unequal columns you may have to create text boxes in desired sizes and link them. Other page-layout software automatically establish unequal columns when the margin settings have been defined.

☐ a. Create unequal columns on a **new page**, using the following specifications:

- Type of columns—Unequal or custom
- Number of columns—3
- Width of column 1—2 1/4″
- Width of column 2—1 1/2″
- Width of column 3—2 1/4″
- Space between columns (gutter)—0.5″

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☐ b. Type the header "Column 1" in 12-point type in column 1.

☐ c. Type the header "Column 2" in 12-point type in column 2.

☐ d. Type the header "Column 3" in 12-point type in column 3.

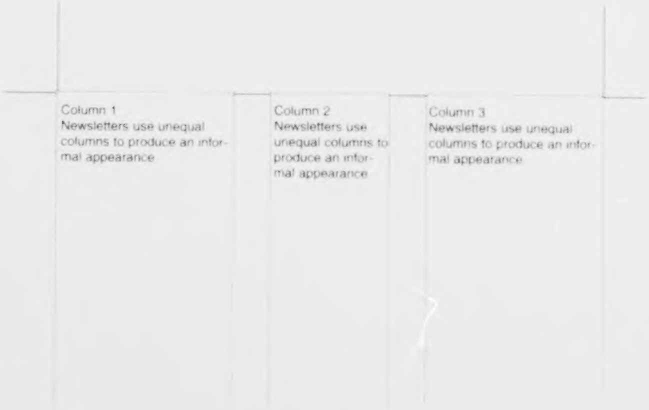
☐ e. Type the text in Figure 4 in 12-point type in each of the three columns.

Note: The page on the display should appear as it does in Figure 5.

Figure 4

Newsletters use unequal columns to produce an informal appearance.

Figure 5



Column 1
Newsletters use unequal columns to produce an informal appearance

Column 2
Newsletters use unequal columns to produce an informal appearance

Column 3
Newsletters use unequal columns to produce an informal appearance

☐ f. Print the page and write your name and "Job Sheet 3—Job 2" at the top of the printed page.

☐ 8. Save the file.

☐ 9. Close file, quit the page-layout software, and turn off computer.

☐ 10. Submit Jobs 1 and 2 and the worksheet for Job Sheet 3 to your instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

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Worksheet for Job Sheet 3

Name ______________________________

Select margin settings

1. Does the page-layout software have default margin settings for an $8^1/_2$"x 11" page? (Circle the appropriate answer below.)

   Yes No

2. If the answer to item 1 above is yes, record the settings requested on the blank lines provided below.

   Left (inside) ________ Top ________

   Right (outside) ________ Bottom ________

3. What is the name of the menu that must be accessed to define margin settings?

   ____

Objective 21

Job Sheet 4—Practice Using Paragraph- and Type-Specification Features and Flow Text

Name ____________________ Attempt Number ________

Date ____________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Text aligned as specified	______
• Indents set as specified	______
• Tabs set as specified	______
• Type specification set as specified	______
• Text created and flowed as specified	______
• Examples all printed out	______

Basic Skills

Reading Technology

Introduction

This exercise gives the student experience in aligning text, setting tabs and indents, selecting type, and flowing text—all basic page-layout skills.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- File created in Job Sheet 3

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on site.

☐ 1. Start the computer.

☐ 2. Turn on the printer.

☐ 3. Open page-layout program.

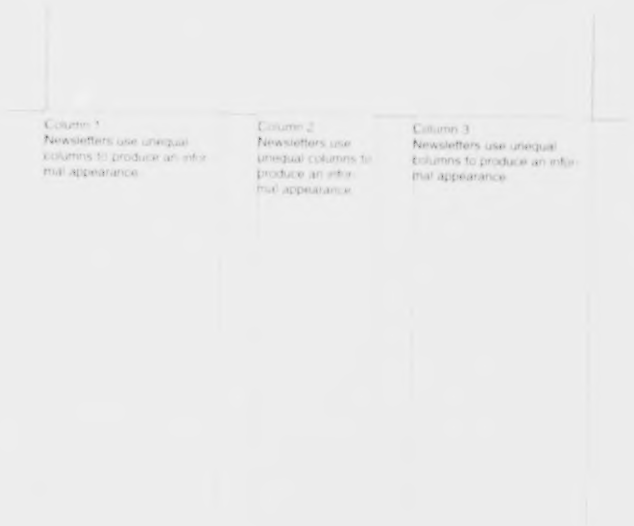
☐ 4. Open file created in Job Sheet 3.

❑ 5. **Select text alignment**

Note: With many programs, the text-alignment feature appears in the paragraph-specifications menu; however, it may appear as a feature in another menu.

❑ a. Go to page 2 in the file, which contains three unequal columns; see Figure 1 below.

Figure 1



Column 1
Newsletters use unequal columns to produce an informal appearance.

Column 2
Newsletters use unequal columns to produce an informal appearance.

Column 3
Newsletters use unequal columns to produce an informal appearance.

❑ b. Edit header in column 1 to read "Left Alignment."

❑ c. Select header and text and then implement left align.

❑ d. Edit header in column 2 to read "Right Alignment."

❑ e. Select header and text and then implement right alignment.

❑ f. Edit header in column 3 to read "Center Alignment."

❑ g. Select header and text and then implement center alignment.

❑ h. Copy and paste header and text in column 1 one inch below the original text.

❑ i. Edit header to read "Justified Alignment."

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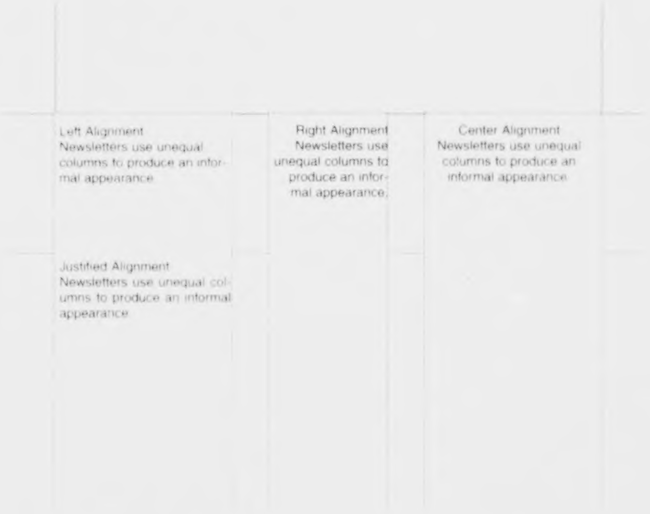
❑ j. Select header and text, and then implement justified alignment.

Note: The page on the screen should appear as it does in Figure 2 below.

Figure 2



Left Alignment
Newsletters use unequal columns to produce an informal appearance

Right Alignment
Newsletters use unequal columns to produce an informal appearance.

Center Alignment
Newsletters use unequal columns to produce an informal appearance

Justified Alignment
Newsletters use unequal columns to produce an informal appearance

❑ 6. Save the file.

❑ 7. Print the page showing all four alignment methods; write your name and "Job Sheet 4—Job 1" at the top of the printed page.

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☐ 8. **Set indents** (left or right paragraph spacing)

Note: Indents provide a way of setting a line of type to the right or left of the remaining type in a text block. Indents can also be set to indent both right and left edges of type from remaining type. See Figure 3. With many programs, the indent-setting feature appears in the paragraph-setup menu; however, it may appear as a feature in another menu.

Figure 3

> The first three lines of type are not
> indented. They are carried out the full
> width of the margins. The fourth and
>   following lines of type are
>   indented on both sides. Indents
>   can occur on both sides or a
>   single side.
> A hanging paragraph can be created by
>   placing the first line at the left
>   margin and indenting the remainder
>   of the paragraph.

☐ a. Go to page 2 in the file, which contains the four alignment methods.

☐ b. Enter the following information to implement a first-line indent in column 1:

- First-line indent—0.25″

  Note: The indent will set the first line of the text to begin to the right of the remaining lines.

- Left indent—0
- Right indent—0

☐ c. Enter the text shown in Figure 4 into column 1; observe how the first line is indented.

Figure 4

> First-line indents are commonly used in paragraphs set with left alignment and a ragged-right edge.

☐ d. Enter the following information to implement left and right indents in column 2.

- First-line indent—0
- Left indent—0.25"
- Right indent—0.25"

☐ e. Enter the text shown in Figure 5 into column 2; observe the indents on both sides of the text.

Figure 5

> Lengthy quotations sometimes appear within left and right indents.

☐ 9. Save the file.

☐ 10. Print the page showing various indents created; write your name and "Job Sheet 4—Job 2" at the top of the printed page.

☐ 11. **Set tabs**

Note: Tabs differ from indents because they can be utilized for placing individual characters as well as words in specific positions. Tab alignment can be set for either left, right, center, dot-leader, or decimal positions. See Figure 6.

Figure 6

Page-layout software provides unlimited opportunities to produce professional-looking documents.	PROFESSIONAL EXPERIENCE
A left tab or indent is the standard for beginning new paragraphs.	**Right tabs are attractive in resumes.**
CAPITAL GAINS	1,278.35 255.00 3.67
Center tabs are frequently used for headlines and in tables.	**Decimal tabs appear in financial documents.**

☐ a. Insert a **new page** in the file containing indent samples.

☐ b. **Recreate tabs** shown in Figure 6 above.

☐ 12. Save the file.

☐ 13. Print the page showing all four tab-alignment positions; write your name and "Job Sheet 4—Job 3" at the top of the printed page.

☐ 14. **Select type specifications**

Note: Type specifications can include the following:

- Style—Normal, bold, italic, underline, etc.
- Typeface—Helvetica, Courier, Times Roman, etc.
- Type size—6, 8, 10, 12, 14 points, etc.
- Case—Upper/lowercase, all caps, small caps, etc.
- Position—Normal, superscript, subscript
- Leading—Automatic or a specific increment

☐ a. Insert a **new page** in the file.

Note: The new page should contain two equal columns. If it doesn't, then create two equal columns.

☐ b. Access type-specifications menu.

☐ c. Enter the text shown in Figure 7 in 10-point Helvetica bold type.

Figure 7

> **Creative use of type can add flair to most any document.**

☐ d. Copy the text and paste at different location on the page.

☐ e. Select a different typeface for text; observe how text appears on page.

☐ f. Copy the text and paste at different location on page.

☐ g. Select 12-point type specification; observe how text appears on page.

☐ h. Copy the text and paste at different location on page.

☐ i. Select all-caps type specification; observe how text appears on page.

☐ j. Copy the text and paste at different location on the page.

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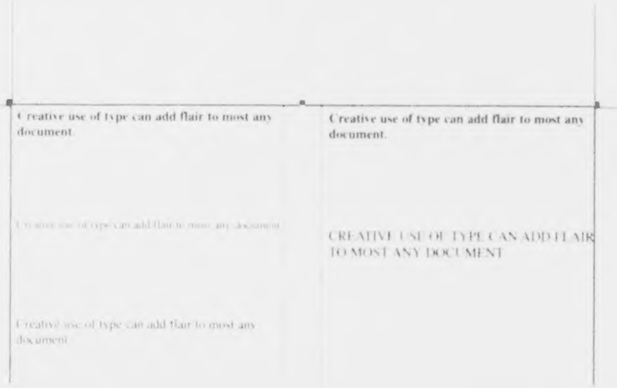
☐ k. Select 16-point leading as type specification; observe how text appears on the page.

Note: The page on display should appear as it does in Figure 8.

Figure 8



Creative use of type can add flair to most any document.

Creative use of type can add flair to most any document.

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Creative use of type can add flair to most any document.

CREATIVE USE OF TYPE CAN ADD FLAIR TO MOST ANY DOCUMENT

☐ 15. Print the page showing all five type specifications; write your name and "Job Sheet 4—Job 4" at the top of the printed page.

☐ 16. **Flow text**

Note: The following steps assume that handles are used to flow text in the on-site software program. Other methods are used in some software programs. If necessary, modify the following steps to comply with the page-layout software used on-site.

☐ a. Insert a new page in the file.

☐ b. Place word-processing file created in Job Sheet 1.

Note: File should appear as it does in Figure 9 below.

Figure 9

Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.

Editing text in page-layout software is simple. It is important to follow each step carefully. Sentences can be moved within paragraphs or to other places in the document. Entire paragraphs can be rearranged with ease.

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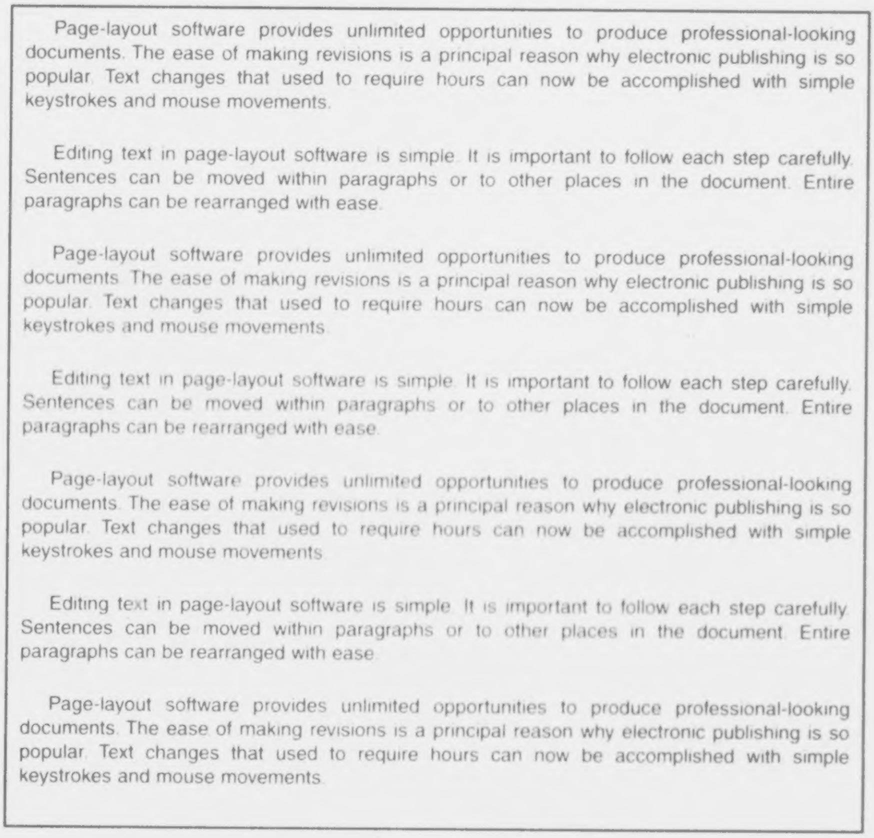
☐ c. Copy and paste the two file paragraphs until you obtain a full page of text.

Note: The page on the display should appear as it does in Figure 10 below.

Figure 10



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Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.

☐ d. Save file.

☐ e. Use the following specifications to create a new page:

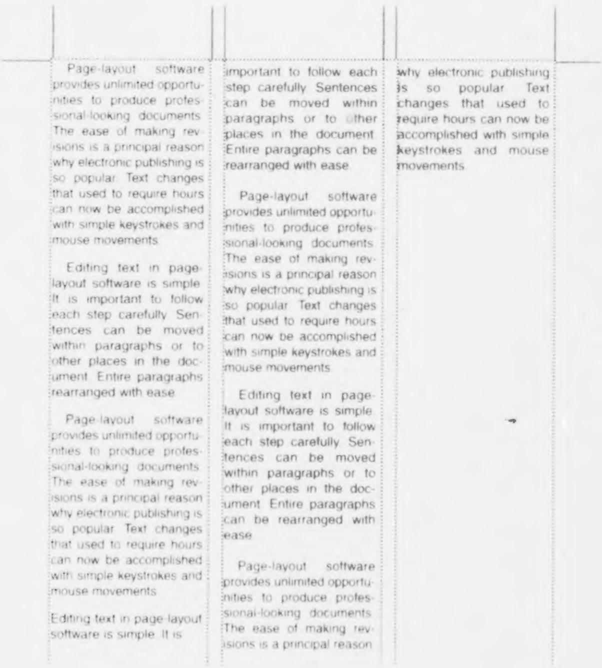
- Columns—3 of equal size
- Typesize—12-point Helvetica (automatic leading)

☐ f. Save file.

☐ g. Copy and paste text from previous page 3-column page created in step e; flow text as necessary.

Note: The page on the display should appear as it does in Figure 11 below.

Figure 11



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☐ h. Save file.

☐ i. Print the page and write your name and "Job Sheet 4—Job 4" at the top of the printed page.

☐ 17. Close file, quit the page-layout software, and turn off computer.

☐ 18. Submit Jobs 1 through 4 to instructor for evaluation.

Evaluator's Comments: ______________________________

____

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Objective 22

Job Sheet 5—Create, Edit, and Move a Headline

Name ____________________ Attempt Number ________

Date ____________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• Computer and printer turned on properly	
• Headline created in upper/lower case using specified font	
• Headline placed as directed on page	
• Headline type size modified to specifications	
• Headline centered	
• Headline moved, positioning as directed on page	
• Headline modified using small caps and bold typestyle	
• File saved and printed	
• Quit software and exited system properly	
• Computer shut down and monitor turned off properly	

Basic Skills

Reading Technology

Introduction

This exercise allows a student to gain experience in creating a headline, editing, and printing.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- Pen
- Assignment Sheet 2

Procedure

Note: The steps in this procedure should be modified to comply with the page-layout software and EPP equipment available.

☐ 1. Boot computer.

☐ 2. Turn on printer.

☐ 3. Open page-layout software.

☐ 4. Create new file, completing document setup, if required.

☐ 5. Use the following specifications to **create headline** shown in Figure 1 below.

Specifications:

- Use upper/lower case letters in 18-point type
- Place headline on page approximately 2 inches from top edge
- Select and **center headline** using mouse
- Font should be Times or Times Roman
- Print page and write your name and "Job Sheet 5—Job 1" at top of printed page

Figure 1

Editing Techniques for Electronic Publishing

☐ 6. Use mouse and appropriate editing tools to edit headline to read as shown in Figure 2 below.

Figure 2

ELECTRONIC PUBLISHING EDITING TECHNIQUES

☐ 7. Use necessary editing tools to move headline upward to 1.5" from top of page.

☐ 8. Select headline and change style to **Times bold** and **small caps**.

☐ 9. Save file to designated folder/disk using appropriate name.

☐ 10. Print page and write your name and "Job Sheet 5—Job 2" at top of printed page.

☐ 11. Close file and exit page-layout software.

☐ 12. Shut down computer and printer.

☐ 13. Submit Jobs 1 and 2 to instructor for evaluation.

Evaluator's Comments: ____________________

____

____

Objective 23

Job Sheet 6—Place a File and Then Edit and Move Sentences Within File Paragraphs

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Word processing document imported/placed correctly	______
• Words inserted and deleted in sentences as specified	______
• Sentences deleted as specified	______
• Sentences copied and pasted as specified	______
• Sentences cut and pasted as specified	______
• File saved and pages printed as required	______

Basic Skills

Reading

Technology

Introduction

This exercise allows a student to gain experience in basic page-layout techniques.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- Pen
- File created in Job Sheet 1
- File created in Job Sheet 5

Procedure

☐ 1. Boot computer.

☐ 2. Turn on printer.

☐ 3. Open page-layout software.

☐ 4. Open file created in Job Sheet 5.

☐ 5. **Place word-processed file** created in Job Sheet 1.

Note: The text paragraphs in the file should appear as shown in Figure 1.

Figure 1

> Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.
>
> Editing text in page-layout software is simple. It is important to follow each step carefully. Sentences can be moved within paragraphs or to other places in the document. Entire paragraphs can be rearranged with ease.

☐ 6. **Underline** the word "unlimited" in the first paragraph and apply **bold** (using correct font) to the word "simple" in the second paragraph. Follow the steps recorded in Assignment Sheet 2 for underlining text and creating boldface text.

☐ 7. **Insert and delete words/sentences** in text paragraph

a. Refer to third sentence of second text paragraph; see highlighted text in Figure 2.

Figure 2

> Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.
>
> Editing text in page-layout software is **simple**. It is important to follow each step carefully. Sentences can be moved within paragraphs or to other places in the document. Entire paragraphs can be rearranged with ease.

b. Using the mouse and appropriate editing tools/keystrokes, insert word *moved* between the words *or* and *to*.

Note: The paragraph should now appear as shown in Figure 3.

Figure 3

> Editing text in page-layout software is **simple**. It is important to follow each step carefully. Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease.

☐ 8. Save file using an appropriate file name.

☐ 9. Print page and write your name and "Job Sheet 6—Job 1" at top of printed page.

☐ 10. **Delete sentence** indicated in text paragraph

   a. Refer to second sentence of second text paragraph; see highlighted text in Figure 4.

Figure 4

> Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.
>
> Editing text in page-layout software is **simple**. **It is important to follow each step carefully.** Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease.

   b. Using the mouse and appropriate editing tools, delete highlighted sentence.

   Note: The paragraph should now appear as it does in Figure 5.

Figure 5

> Editing text in page-layout software is **simple**. Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease.

☐ 11. Save file.

☐ 12. Print page and write your name and "Job Sheet 6—Job 2" on printed page.

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☐ 13. **Copy and paste** a sentence in text paragraph

a. Refer to first sentence of first text paragraph; see highlighted text in Figure 6.

Figure 6

> **Page-layout software provides unlimited opportunities to produce professional-looking documents**. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.
>
> Editing text in page-layout software is **simple**. Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease.

b. Using the mouse and appropriate editing tools, copy highlighted sentence, then paste sentence at end of first text paragraph

Note: The first text paragraph should now appear as it does in Figure 7.

Figure 7

> Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements. Page-layout software provides unlimited opportunities to produce professional-looking documents.

☐ 14. Save file.

☐ 15. Print page and write your name and "Job Sheet 6—Job 3" on printed page.

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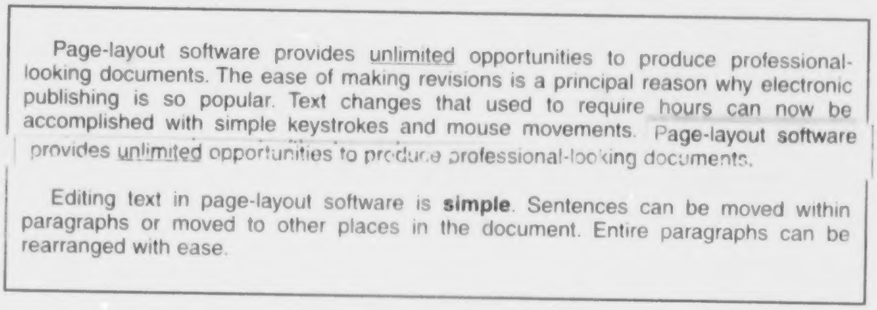
☐ 16. **Cut and paste** a sentence in text paragraph

a. Refer to last sentence of first text paragraph; see highlighted text in Figure 8.

Figure 8



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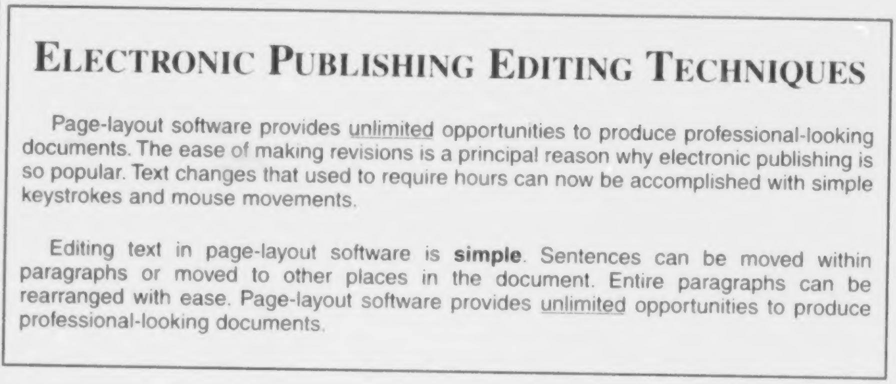
Editing text in page-layout software is **simple**. Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease.

b. Using the mouse and appropriate editing tools, cut highlighted sentence, then paste sentence at end of second text paragraph.

Note: The page should now appear as it does in Figure 9.

Figure 9



ELECTRONIC PUBLISHING EDITING TECHNIQUES

Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.

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☐ 17. Save file.

☐ 18. Print page and write your name and "Job Sheet 6—Job 4" on printed page.

☐ 19. Close file and exit page-layout software.

☐ 20. Shut down computer.

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☐ 21. Submit Jobs 1 through 4 to your instructor for evaluation.

Evaluator's Comments: ______________________________

____

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31

Objective 24

Job Sheet 7—Copy/Paste, Cut/Paste, and Move a Paragraph

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• Text paragraphs created as specified	
• Text paragraph copied and pasted as specified	
• Text paragraph cut and pasted as specified	
• Text paragraph moved as specified	
• File saved and pages printed as required	

Basic Skills

Reading Technology

Introduction

This exercise allows a student to gain experience in basic page-layout techniques.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- Pen
- File saved in Job Sheet 6

Procedure

Note: The steps in this procedure should be modified to comply with the page-layout software and EPP equipment available.

☐ 1. Boot computer.

☐ 2. Turn on printer.

☐ 3. Open page-layout software.

☐ 4. Open file created in Job Sheet 6.

☐ 5. **Create two text paragraphs** by placing an insertion point and typing the following text at the bottom of the document.

Figure 1

Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

Text is enclosed in handles that indicate where the text begins and ends. Handles enable you to flow text around artwork or photos and arrange text on a page. You can also use handles to change the line length of text.

Note: The text paragraphs should appear as shown in Figure 2. The numbers that appear beside the paragraphs are reference numbers you will use in the following steps.

Figure 2

1 Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.

2 Editing text in page-layout software is **simple**. Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease. Page-layout software provides unlimited opportunities to produce professional-looking documents.

3 Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

4 Text is enclosed in handles that indicate where the text begins and ends. Handles enable you to flow text around artwork or photos and arrange text on a page. You can also use handles to change the line length of text.

☐ 6. Save file.

☐ 7. Print page and write your name and "Job Sheet 7—Job 1" on printed page.

☐ 8. **Copy and paste text paragraph**

a. Refer to text paragraph 3; see Figure 2 on the previous page.

b. Using the mouse and appropriate editing tools, copy text paragraph 3 and paste below the last text paragraph (paragraph 4).

Note: The text paragraphs should now appear as they do in Figure 3.

Figure 3

1 Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.

2 Editing text in page-layout software is **simple**. Sentences can be moved within paragraphs or moved to other places in the document. Entire paragraphs can be rearranged with ease. Page-layout software provides unlimited opportunities to produce professional-looking documents.

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4 Text is enclosed in handles that indicate where the text begins and ends. Handles enable you to flow text around artwork or photos and arrange text on a page. You can also use handles to change the line length of text.

5 Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

☐ 9. Save file.

☐ 10. Print page and write your name and "Job Sheet 7—Job 2" on printed page.

☐ 11. **Cut and paste paragraph**

a. Refer to text paragraph 4; see Figure 3 on the previous page.

b. Using the mouse and appropriate editing tools, copy text paragraph 4 and paste the paragraph between paragraphs 2 and 3.

Note: The text paragraphs should appear as they do in Figure 4.

Figure 4

1 Page-layout software provides unlimited opportunities to produce professional-looking documents. The ease of making revisions is a principal reason why electronic publishing is so popular. Text changes that used to require hours can now be accomplished with simple keystrokes and mouse movements.

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4 Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

5 Text is enclosed in handles that indicate where the text begins and ends. Handles enable you to flow text around artwork or photos and arrange text on a page. You can also use handles to change the line length of text.

6 Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

☐ 12. Save file.

☐ 13. Print page and write your name and "Job Sheet 7—Job 3" on printed page.

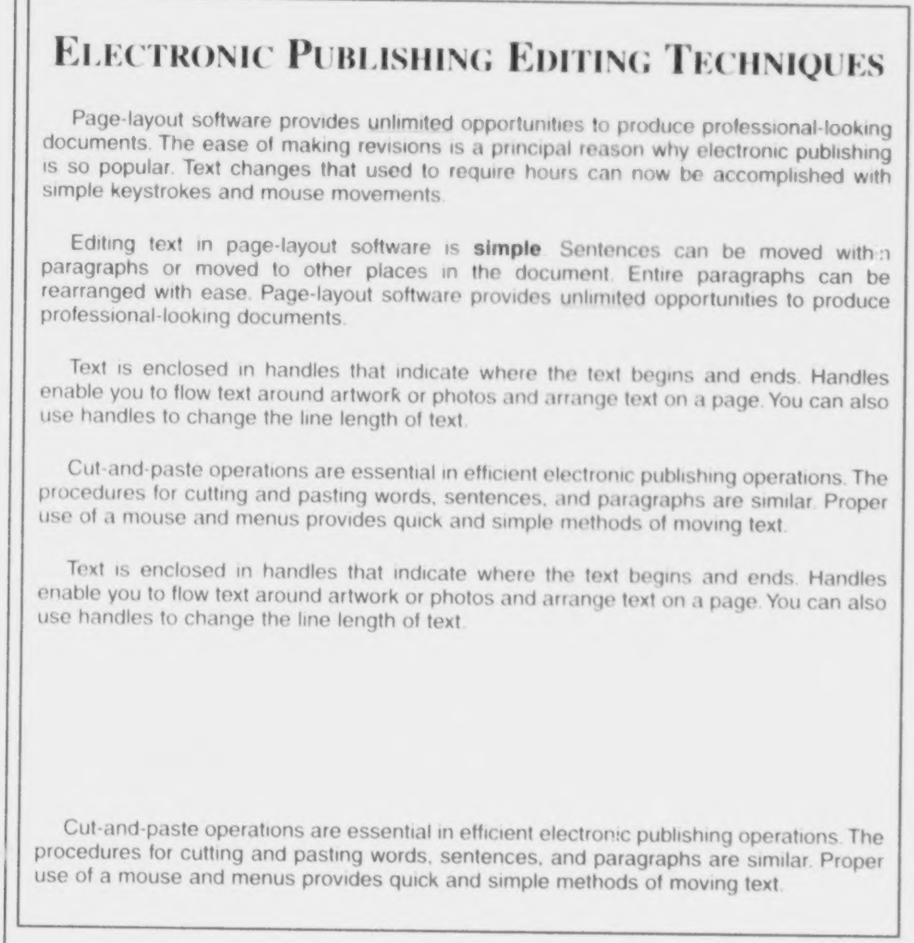
☐ 14. **Move text paragraph**

a. Refer to text paragraph 6; see Figure 4 on the previous page.

b. Using the mouse and appropriate editing tools, cut text paragraph 6, make new text block, and move (drag) text paragraph 6 to a location 2 inches below text paragraph 5.

Note: The page should now appear as it does in Figure 5.

Figure 5



ELECTRONIC PUBLISHING EDITING TECHNIQUES

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Text is enclosed in handles that indicate where the text begins and ends. Handles enable you to flow text around artwork or photos and arrange text on a page. You can also use handles to change the line length of text.

Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

Text is enclosed in handles that indicate where the text begins and ends. Handles enable you to flow text around artwork or photos and arrange text on a page. You can also use handles to change the line length of text.

Cut-and-paste operations are essential in efficient electronic publishing operations. The procedures for cutting and pasting words, sentences, and paragraphs are similar. Proper use of a mouse and menus provides quick and simple methods of moving text.

☐ 15. Save file.

☐ 16. Print page and write your name and "Job Sheet 7—Job 4" on printed page.

☐ 17. Close file and exit page-layout software.

☐ 18. Shut down computer.

☐ 19. Submit Jobs 1 through 4 to your instructor for evaluation.

Evaluator's Comments: ____________________

____

____

Objective 25

Job Sheet 8—Create a Letterhead

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Letterhead created according to specifications	______
• Example printed out	______

Basic Skills

Reading Technology

Introduction

This exercise puts in practice the skills learned in previous job sheets and produces a finished EPP project.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on site.

☐ 1. Start the computer.

☐ 2. Turn on the printer.

☐ 3. Open page-layout program.

☐ 4. Create new file using the following specifications.

Specifications

- Margins

  Top—.5″
  Bottom—.75″
  Left—.5″
  Right—.5″

- Company name: 18 point type, flush left, and upper/lowercase letters
- Company address: 10 point type, flush right, and upper/lowercase letters
- Graphics: Double-line rule between company name and address

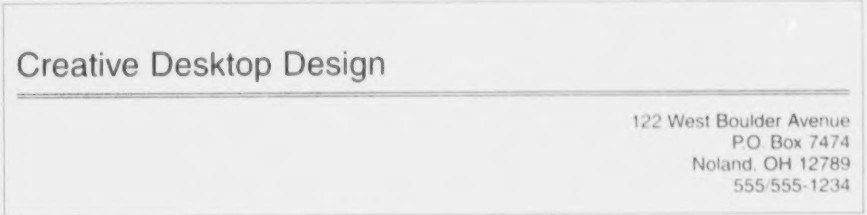
☐ 5. Enter the following text to create the letterhead.

Note: Letterhead should appear as it does in Figure 1.

Text

- Company name: Creative Desktop Design
- Company address: 122 West Boulder Avenue
  P.O. Box 7474
  Noland, OH 12789
  555/555-1234

Figure 1



Creative Desktop Design

122 West Boulder Avenue
P.O. Box 7474
Noland, OH 12789
555/555-1234

☐ 6. Print letterhead; write your name and Job Sheet 8 at top of printed page.

☐ 7. Close file.

☐ 8. Exit page-layout software.

☐ 9. Turn off computer and printer.

☐ 10. Submit printed page to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

325

Unit 4

Type Selection

Unit Contents

Student Components

Student Page

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2—Select Type Using Guidelines for Readability and Legibility 4–29
3—Perform Font Management Activities 4–31

Objective Sheet

Unit Objective

After completing this unit, the student should be able to select type and identify font formats used in electronic prepress. The student should demonstrate these competencies by completing the assignment sheets and job sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to type selection with their definitions.
2. Match terms related to punctuation marks and symbols used in EPP with their definitions.
3. Identify the anatomy of type character.
4. Match basic type measurements with their definitions.
5. Distinguish among the terms *typeface*, *type family*, *typestyle*, and *font*.
6. Match typeface classifications with their characteristics.
7. Match type adjustments commonly required in EPP with their definitions.
8. Select true statements concerning factors affecting readability and legibility in typographic materials.
9. Complete statements concerning font characteristics.
10. Match types of font technologies with their descriptions.
11. Complete statements concerning font issues to consider when sending EPP files to an output service provider.
12. Select true statements concerning the characteristics of font management utilities.
13. Select true statements concerning font transferability issues.
14. Measure type. (Assignment Sheet 1)
15. Identify fonts available on electronic prepress workstation. (Assignment Sheet 2)
16. Practice adjusting leading, kerning, and letterspacing. (Job Sheet 1)
17. Select type using guidelines for readability and legibility. (Job Sheet 2)
18. Perform font management activities. (Job Sheet 3)

Information Sheet

Objective 1

Terms and definitions

a. **Body type**—Type 12 points or smaller in size

b. **Characters**—Individual letters, numbers, punctuation marks, or symbols

c. **Display type**—Type 14 points or larger in size

d. **Font management utilities**—Software that manages the fonts available to the system by allowing the user to turn fonts on and off as needed

Examples: Extensis Suitcase, Adobe Type Manager Deluxe, Alsoft MasterJuggler Pro, and TypeTamer

e. **Legibility**—How quickly a short body of text is recognized

f. **Lowercase**—Small letters of the alphabet

g. **Oblique**—Type that is *slanted*; typical of most sans serif "italic" faces

h. **Orphan**—Last line of a paragraph that falls at the top of the next column or page

Note: Page-layout software includes options to prevent orphans. QuarkXPress and Adobe PageMaker both have an option called "Keep Lines Together" which prevents orphans.

i. **Readability**—How easily large bodies of text can be read

j. **River**—Distracting pattern of white space running vertically down through body copy; most common in justified alignment

k. **Straight type**—Body type set in normal paragraph form

l. **Tabulated type**—Type set in charts, tables, formulas, or other elements requiring tab settings to be specified

m. **Typography**—The art and science of working with type

n. **Uppercase**—Capital letters of the alphabet

o. **Widow**—End of a paragraph that is hyphenated or the last line of a paragraph that contains fewer than seven characters

Information Sheet

Objective 2

Punctuation marks and symbols used in EPP

a. **Dingbat**—A typographic decorative character such as a bullet, star, etc.

Examples: The following characters were created using the font Zapf Dingbats.

✗ ■ ❦ ➜ ☞ ★

b. **Ellipsis**—A character used to indicate where text has been omitted from the original material

Note: Do not use the character on your keyboard that creates an ellipsis because it is too tight for typographic standards. Instead, type a thin or en space before and after each period for correct spacing. If using QuarkXPress (where you cannot type thin and en spaces), kern the three periods open. If an ellipsis ends a sentence it should be followed by a period.

Example: Then he said, ". . . this is strange."

c. **Em dash**—A dash the width of the capital letter "M" (18 units); used to set off a phrase with a lot of commas or to mark an abrupt change in thought or sentence structure

Note: Em dashes are set with no space before or after the dash. To create an em dash, press the following keys: Option + Shift + Hyphen (Mac) or Alt + 0151 (Windows).

Example: To mark an abrupt change in thought—use an em dash.

d. **En dash**—A dash the width of the capital letter "N" (9 units); used to indicate duration

Note: En dashes are set with little or no space before or after the dash. To create an en dash, press the following keys: Option + Hyphen (Mac) or Alt + 0150 (Windows).

Example: We will meet from 4–8 P.M. in the auditorium.

e. **Ligature**—Two or more characters combined in one unit

Note: Ligatures solve typographic problems such as the hook of an "f" bumping into the dot of an "i."

Example: fi = ﬁ fl = ﬂ

f. **Small caps**—Capital letters that are the same size as the x-height of the typeface

Example: SMALL CAPS ARE THE SAME SIZE AS THE X-HEIGHT.

g. **Smart quotes**—True typographer's quotes; often called "curly quotes"

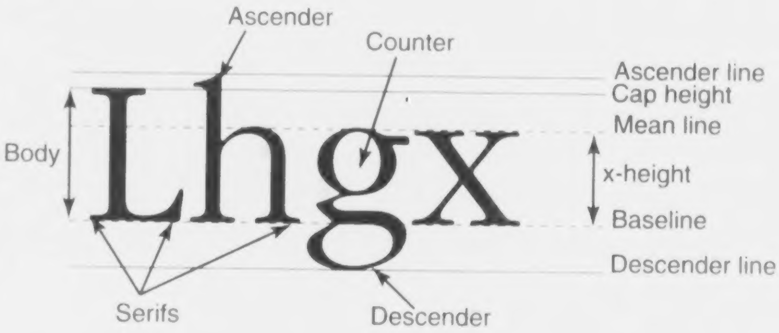
Note: Page-layout applications contain an option that allows the user to select "smart quotes." It is important to differentiate between "smart quotes" and the keyboard combinations needed for single and double prime marks (8′5″ x 12′0″).

Example: “What did you say?”

Objective 3

Anatomy of a type character

Figure 1



a. **Ascender**—Upward stroke that rises above the x-height

b. **Ascender line**—Invisible line marking upper limit of upward stroke

Note: The ascender line is not always the same as the cap height since ascenders are often taller than caps.

c. **Baseline**—The invisible line marking the lower limit upon which type sits

d. **Body**—Central or principal part of type character

e. **Cap height**—Height of the capital letters

f. **Counter**—The enclosed space or hollow of a letter

g. **Descender**—Downward stroke that extends below the baseline

h. **Descender line**—Invisible line marking the lower limit of the descender's downward stroke

i. **Serifs**—Small finishing strokes at terminals of ascending and descending strokes of type character

j. **x-height**—Height of a lowercase letter excluding the ascenders and descenders

Note: The x-height creates the impression of the font's size. Notice in the following example how the x-heights differ from one typeface to another even though they are all 24-point type.

Example:

Typed *Typed* **Typed** Typed

Objective 4

Basic type measurements

a. **E-scale**—A tool used to measure type size using the capital letter E as a reference

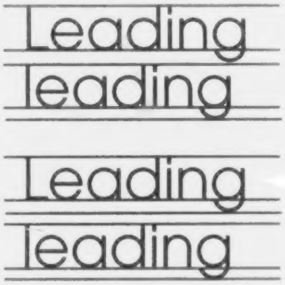
Figure 2

E 6 pt.
E 7 pt
E 8 pt.
E 9 pt.
E 10 pt.
E11 pt.
E 12 pt.
E 14 pt.
E 16 pt.
E 18 pt.

b. **Leading**—The space in points between baselines of two lines of text

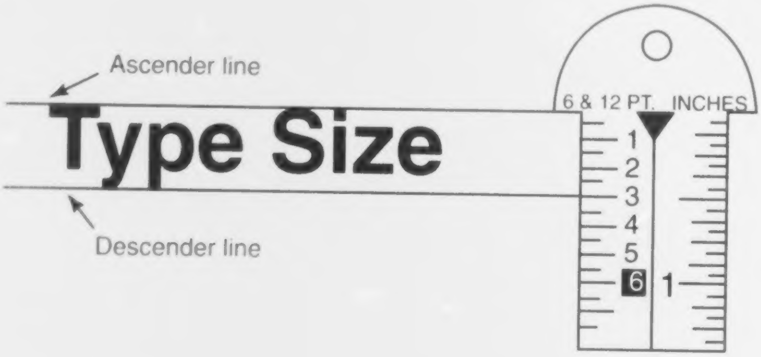
Note: Some software refers to leading as "line spacing."

Figure 3


Leading
leading
24pt. type/24pt. leading
Leading
leading
24pt. type/28pt. leading

c. **Line gauge**—A printer's ruler used to measure type that is calibrated in picas, points, and inches

Figure 4


Ascender line
Type Size
Descender line
6 & 12 PT.
INCHES
1
2
3
4
5
6
1

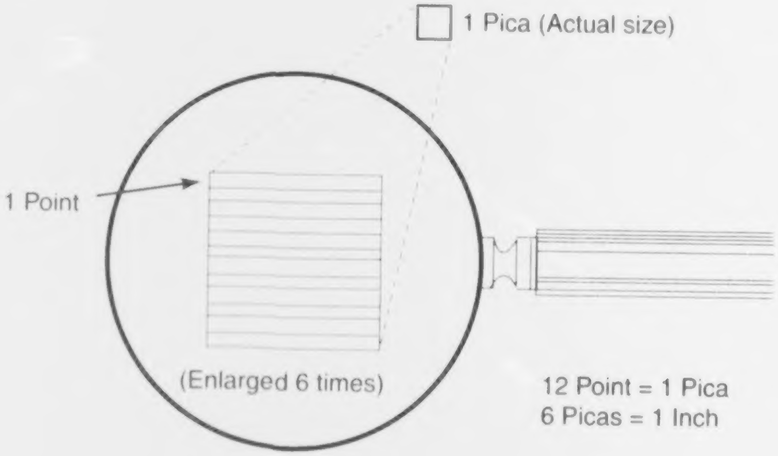
d. **Line length**—Measurement in picas of distance between the beginning and ending of a line of type or width of a column

Note: Line-length measurements for the same text in the same point size vary from typeface to typeface because of the width of the individual characters.

e. **Pica**—Unit of measure equal to 12 points or 1/6 inch (6 picas = 1 inch)

Note: Picas are commonly used to measure the line length and width of columns and gutters.

Figure 5


1 Pica (Actual size)
1 Point
(Enlarged 6 times)
12 Point = 1 Pica
6 Picas = 1 Inch

f. **Point**—Unit of measure equal to $^{1}/_{72}$ inch (12 points = 1 pica, 72 points = 1 inch)

Note: Points are commonly used to measure type size and leading.

g. **Type size**—The measurement in points of the distance between the ascender line and the descender line of a type character

Objective 5

Definitions of the terms *typeface, type family, typestyle*, and *font*

a. **Typeface**—Form and shape of a group of letters and numbers

Note: There are literally hundreds of typefaces available. Each typeface has its own personality.

Figure 6

AVANT GARDE—This is an example of Avant Garde.

HELVETICA REGULAR—This is an example of Helvetica Regular.

HOBO—This is an example of Hobo.

GARAMOND—This is an example of Garamond.

b. **Type family**—Typefaces that show a marked resemblance and bear a common name but have individual design variances such as weight, width, and posture

Figure 7—Example of Helvetica family

Helvetica	ABCDEFGHIJKLMNOPQRSTUV
Helvetica Bold	**ABCDEFGHIJKLMNOPQRSTUV**
Helvetica Oblique	*ABCDEFGHIJKLMNOPQRSTUV*
Helvetica Bold Oblique	***ABCDEFGHIJKLMNOPQRSTU***

c. **Typestyle**—Type modification such as condensed, italic (oblique), bold, or bold italic

d. **Font**—Complete set of type of a particular face, style, and point size

Figure 8

Korinna

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890!@#$%^&*( )-=+{ }?.,<>/

Objective 6

Typeface classifications

a. **Serif**—Characters that vary in thickness and have a stroke that projects from the top or bottom of the main stroke of the character

Examples: Times Roman, Palatino, Bookman, Tiffany

Note: Studies show that serifs provide visual clues to direct the reader's eye from one character to the next, making serif typefaces easier to read. For this reason you will find serif typefaces are used for large bodies of text, such as in newspapers and magazines.

Figure 9—Times Roman

Serif type

b. **Sans serif**—Characters that are uniform in thickness and do not have serifs

Examples: Arial, Gills Sans, Helvetica

Note: The French word *sans* means "without"; the term *sans serif* therefore means "without serifs." Sans-serif typefaces are commonly used in display type.

Figure 10—Helvetica

Sans Serif type

c. **Script**—Characters that look like handwriting, hand-lettering, or calligraphy

Examples: Park Avenue, Snell Roundhand, Shelly Allegro Script

Note: Also called "cursive." Script is used for announcements, invitations, and applications requiring few words. Avoid setting script in all caps since this makes it very difficult to read.

Figure 11—Shelly Allegro Script

Script

d. **Decorative**—Characters that are usually ornamental

Note: The use of decorative typefaces should be limited to display type. While they can add "punch" to a publication, or create a definitive "look," if overused they can destroy a design.

Figure 12—Stencil

DECORATIVE

Objective 7

Type adjustments commonly required in EPP

a. **Leading** (pronounced "ledding")—Increasing or decreasing space between lines of type to improve legibility or to vertically fill (justify) page of type

Examples: Increasing leading when body type seems dark or dense; decreasing leading in headlines to tighten and bring words together can improve legibility and create unity

Note: EPP software offers auto leading or the ability to adjust the leading. Auto leading is usually 20 percent of the type size. For example, 10-point type would be set on 12-point leading if using auto leading.

Figure 13—Increasing leading

Leading is the space between lines of type. Measure leading in points from baseline to baseline. EPP software may offer automatic leading or the ability to manually adjust leading. Adjust leading to improve legibility of copy or to vertically fill a page of type.
9pt/9pt

Leading is the space between lines of type. Measure leading in points from baseline to baseline. EPP software may offer automatic leading or the ability to manually adjust leading. Adjust leading to improve legibility of copy or to vertically fill a page of type.
9pt/14pt

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b. **Kerning**—Adjusting the space between individual characters to create a visually consistent look

Note: You must manually kern display type by selecting the space between two letters and adding or removing space to match the visual space between the other characters. Many page-layout applications have keyboard shortcuts or allow numeric values to be entered in a dialog box, thus allowing for kerning type "live" on the screen.

Auto kerning or pair kerning uses special kerning built into certain combinations of letters. This is built into your application and can be turned on or off—leave it on.

Figure 14

Type with no kerning

LOWFAT

Type with MINUS kerning (Space removed)

LOWFAT

c. **Letterspacing**—Increasing or decreasing space between all characters in one or more words

Note: Letterspacing is used to change the spacing of a large amount of text to open the face or tighten it, depending on the natural characteristics of the typeface and its purpose on the page.

Figure 15

LETTERSPACING
- 5

LETTERSPACING
Normal

LETTERSPACING
+ 5

LETTERSPACING
+ 10

LETTERSPACING
+ 20

d. **Tracking**—Applying an overall kerning value to all character pairs in a selected text block

Note: Adobe PageMaker allows for "tracking" using a preset value such as No Track, Loose, Very Loose, Normal, Tight, or Very Tight.

e. **Word spacing**—Increasing or decreasing amount of space between words

Note: Adjust word spacing with care. Increasing word spacing tends to make words drift apart, while decreasing word spacing can make type dense and difficult to read.

Figure 16

Decreasingwordspacingcanmaketypedenseanddifficulttoread.

Increasing word spacing tends to make words drift apart.

Objective 8

Factors affecting readability and legibility in typographic material

Typographers strive to maximize both readability and legibility when choosing typefaces and typestyles and when modifying type elements.

a. Serif typefaces are the most readable because the strokes (serifs) lead the eye from one character to another.

b. Moderate x-height ratios improve readability.

c. Uppercase letters are more difficult to read, reading letter by letter instead of in phrases since word shapes are not easily recognizable.

d. Uneven letter and word spacing disturbs our natural reading pattern, causing the eyes to make constant adjustments for words and lines that are too tight or loose.

e. Line lengths set too long (no more than nine or ten words per line maximum) make it difficult to find the beginning of the next line.

f. Line spacing that is too tight makes if difficult to separate individual words and phrases.

g. Extra bold, extra light, italic, and scripts are more difficult to read and should be used only for accents and special applications.

h. Reverse type causes words to appear smaller and serifs with delicate features to disappear.

Objective 9

Characteristics of fonts

a. A font usually includes regular uppercase and lowercase alphabet letters, numbers, punctuation marks, accents, and commonly used symbols.

b. A font may **not** include small uppercase alphabet letters, italic, or bold characters.

Note: Be cautious when purchasing fonts; manufacturers may boast a large number of fonts per package when in fact what they supply are no more than typestyle variations of the same typeface.

c. A font may include several symbol sets.

Note: Symbol sets are specific groups of characters and symbols intended for a particular purpose. Symbol sets may include foreign characters, accented characters, mathematical symbols, Greek characters, or trademark symbols. These character sets may be viewed for each font by accessing "Key Caps" (Mac) or the "Character Map" (Windows).

d. The standard character set is included on many resident fonts found on laser printers.

e. Expert sets are included with some fonts.

Note: Expert sets are special fonts that contain only special characters, such as small caps, ligatures, swash characters, em dashes, and ornaments.

Objective 10

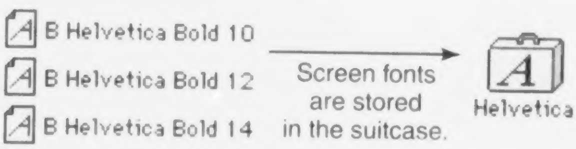
Types of font technologies

a. **Adobe Type 1 fonts**—PostScript font technology preferred by output service providers because of its predictable system behavior and reliable output; consist of a screen font and a printer font

Note: For a Type 1 font to print correctly the screen font and printer font must be available to the computer and printer. When sending a job to an output service provider both the screen and printer fonts must be packaged with the electronic file.

- Screen (bitmap) fonts—Fonts that contain the 72-dpi font rendering information that appears on the monitor; stored in "suitcases" on the computer's hard drive

Figure 17



- Printer (outline) fonts—Scalable, vector-based mathematical information that is stored on computer's hard drive and downloaded to output device when file is sent to print

Figure 18

b. **TrueType fonts**—Apple's font technology consisting of only a suitcase (screen font) file—no printer (outline) font; most common on Windows platform

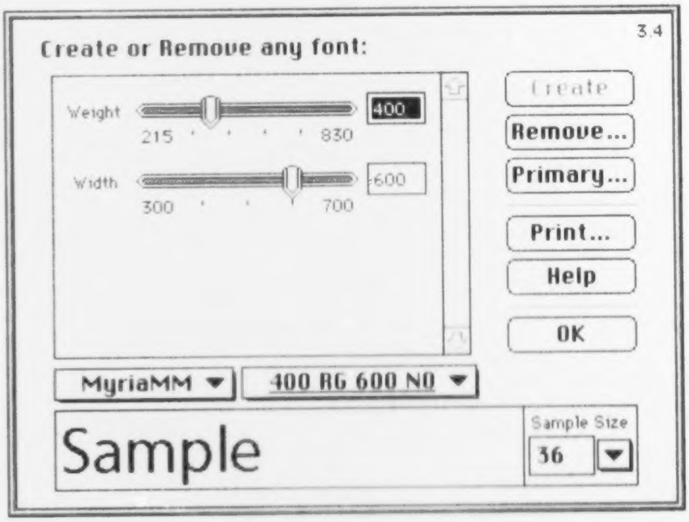
Note: TrueType fonts are **not** suitable for outputting to an imagesetter or digital press, however, they are suitable for outputting to low-resolution laser printers.

Figure 19

c. **Multiple Master fonts**—Font software that allows the user to create variations of a typeface from light to bold and condensed to expanded

Note: Multiple Master fonts require a PostScript Level 2 laser printer for output. Check with your service provider to ensure they can handle them, and make sure you supply the appropriate font files with your job.

Figure 20—Multiple Master fonts (Adobe Type Manager Control Panel)



Weight 400

Width 600

MyriaMM

400 RG 600 NO

Sample Size 36

Objective 11

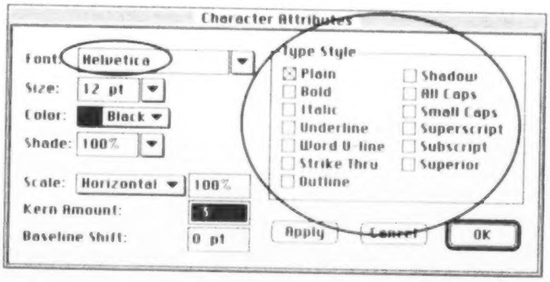
Font issues to consider when sending EPP files to an output service provider

a. Use the appropriate font to create bold or italic text. Do not use the style palette to apply typestyles such as bold or italic to text when creating an EPP document. For example, use the font Helvetica Bold to apply bold typestyle to text.

Note: Using the typestyle buttons such as italic, bold, bold italic, etc. in an EPP document could result in bold or italic text being replaced with plain text when output at the service provider. To correct the use of style tags use the page-layout application's find and replace/change command to swap enforced typestyles with the appropriate italic or bold font. Remember, this means you will need to supply the screen and printer font for each typestyle within the type family being used.

Figure 21a—QuarkXPress

Change the "Font" from "Helvetica" to "B Helvetica Bold." Do not use "Bold" check box at right to change typestyles.



Character Attributes

Font: Helvetica

Size: 12 pt

Color: Black

Shade: 100%

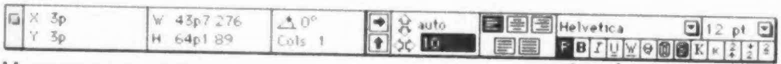
Scale: Horizontal 100%

Kern Amount: 5

Baseline Shift: 0 pt

Type Style: ☒ Plain ☐ Bold ☐ Italic ☐ Underline ☐ Word U-line ☐ Strike Thru ☐ Outline ☐ Shadow ☐ All Caps ☐ Small Caps ☐ Superscript ☐ Subscript ☐ Superior

Do not use the check boxes to select bold, italic, outline, or shadow.

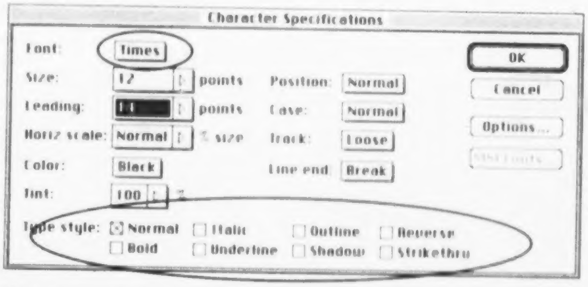


Measurement palette

DO NOT use this option to specify typestyle, instead specify correct cut of font containing desired style.

Figure 21b—Adobe PageMaker

Change the "Font" from "Times" to "B Times Bold." Do not use "Bold" check box at bottom to change typestyles.



Character Specifications

Font: Times

Size: 12 points

Leading: 14 points

Horiz scale: Normal % size

Color: Black

Tint: 100 %

Position: Normal

Case: Normal

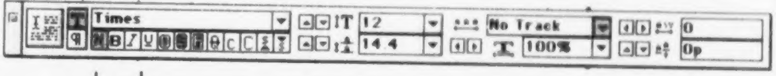
Track: Loose

Line end: Break

Type style: ☒ Normal ☐ Bold ☐ Italic ☐ Underline ☐ Outline ☐ Shadow ☐ Reverse ☐ Strikethru

Do not use the check boxes to select bold, italic, outline, or shadow.

Control palette



DO NOT use this option to specify typestyle, instead specify correct cut of font containing desired style.

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b. Use the font utility in the page-layout program to determine which fonts need to be supplied or packaged with the EPP file(s).

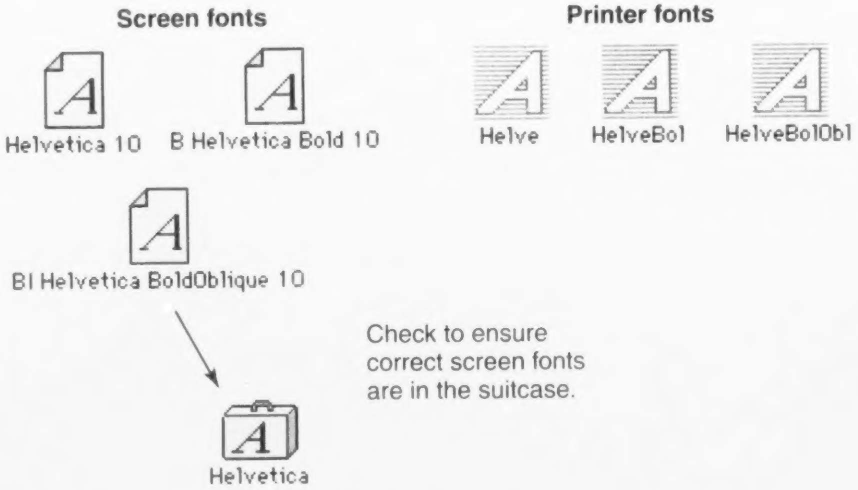
Note: To determine the fonts used in a QuarkXPress document, go to "Font Usage" under the Utilities menu. In a PageMaker document, select "Pub Info" under the Utilities menu and then select Plug-Ins.

c. Provide a copy of all screen fonts (suitcases) used with each document sent to an output service provider.

Note: Output service providers and printers require copies of screen fonts to accurately view fonts and for proper text flow within documents. Even common fonts such as Helvetica must be provided for reliable output since there are many versions and updates available on the market.

d. Provide a copy of all printer outline fonts for every typestyle used in each document sent to an output service provider.

Figure 22—If you used Helvetica, Helvetica Bold, and Helvetica Bold Oblique in an EPP document then you would package the fonts shown below.


Screen fonts
Printer fonts
Helvetica 10
B Helvetica Bold 10
Helve
HelveBol
HelveBolObl
BI Helvetica BoldOblique 10
Helvetica

Check to ensure correct screen fonts are in the suitcase.

e. Do not mix TrueType and PostScript fonts in a document.

Objective 12

Characteristics of font management utilities

a. ATM (Adobe Type Manager) automatically generates any size bitmap font from outline-font data by rasterizing the outlines and translating it into a digital bitmap to be represented on the monitor

Note: ATM can accurately render on-screen type even when scaled, rotated, or skewed. To accomplish this ATM needs both the screen font and printer font loaded on the computer's hard drive. ATM also lets you print Type 1 fonts to non-PostScript printers.

b. Alleviates the need to search through hundreds or thousands of fonts to find a specific font

c. Avoids font naming and numbering conflicts

d. Speeds up system and application startups

e. Loads only the fonts currently being used for output in RAM memory

f. Prevents duplicating and misplacing fonts since fonts do not need to be moved, just turned on

Objective 13

Font transferability issues

When transferring files between computers or platforms, the following procedures should be followed to ensure accurate output.

a. Vector graphics with fonts—Prior to saving the final graphics file to disk, convert all text to paths.

Note: In Macromedia FreeHand use "Convert to paths"; In Adobe Illustrator use "Create Outlines"

b. Page-layout files—If the fonts used in a document are not available on the computer, the page-layout program (Adobe PageMaker or QuarkXPress) will display a dialog box when opening the document that states that fonts are missing. When this occurs, you will need to do **one** of the following:

- Quit the application; locate and load the fonts listed as missing; restart the application; and open the document
- Select each of the fonts listed as missing one at a time and select a substitute font from the available font list for each missing font.

Objective 14

Assignment Sheet 1—Measure Type

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Measurements are accurate	______

Basic Skills

Reading Mathematics

Materials list

- Line gauge
- E-scale

Directions

Measure the type samples and write the correct measurements in the boxes provided.

1.

"Set solid" means set without leading, i.e., 12 point type set with 12 point line depth. Modern typesetting equipment can set one line of type on top of another, called "negative leading," but it is seldom appropriate.

FONT (TYPEFACE AND STYLE)

POINT SIZE

LEADING

LINE LENGTH

ALIGNMENT

2.

A few typefaces offer such variations as shaded, shadowed and outlined, but these are not usually thought of as family variations; instead, they may be classified as novelty.

FONT (TYPEFACE AND STYLE)

POINT SIZE

LEADING

LINE LENGTH

ALIGNMENT

3.

Display type

FONT (TYPEFACE AND STYLE)

POINT SIZE

LINE LENGTH

4.

Decorative fonts are best suited for headlines

FONT (TYPEFACE AND STYLE)

POINT SIZE

LEADING

LINE LENGTH

ALIGNMENT

5.

Always proofread your work to avoid embarrassing mistakes.

FONT (TYPEFACE AND STYLE)

POINT SIZE

LEADING

LINE LENGTH

ALIGNMENT

6.

Drop caps are easy to implement in your type design. In **PageMaker**, use the "Drop Cap" plug-in from the "Utilities" menu. In **QuarkXPress**, look in the "Formats" dialog box under the "Style" menu. You can even add a drop cap to a style sheet. Use one of the beautiful decorative typefaces to emphasize or accent a featured paragraph.

FONT (TYPEFACE AND STYLE)

POINT SIZE

LEADING

LINE LENGTH

ALIGNMENT

Objective 15

Assignment Sheet 2—Identify Fonts Available on Electronic Prepress Workstation

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Font list completed accurately	______

Basic Skills

Reading

Critical Thinking

Materials list

- Electronic prepress computer workstation
- Pen and paper

Directions

Locate and open the folder containing the fonts on your system. Determine which of the four font categories each typeface belongs to and write them in the blanks provided. Use additional notebook paper if necessary.

SERIF

Assignment Sheet 2

SANS SERIF

SCRIPT

DECORATIVE

Objective 16

Job Sheet 1—Practice Adjusting Leading, Kerning, and Letterspacing

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	____
• Performed leading adjustments as specified and printed page	____
• Kerned character sets as specified and printed page	____
• Adjusted letterspacing as specified and printed page	____

Basic Skills

Reading Technology

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation with printer
- Page-layout software

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Open page-layout software and create a new file.

☐ 2. In 10 point Times Roman with a line length of 24 picas, type the text below.

> This text will be used to practice changing leading. Increase leading if the line length is longer than average, the typeface has a large x-height, or you are reversing type out of a background.

☐ 3. **Practice adjusting leading**

  ☐ a. Select the text block and change leading from auto to 12 points.

  Note: You will not notice a change since the auto leading default is set at 120% of the point size.

☐ b. Copy and paste the text at another location on the page.

☐ c. Select the text block and change the leading to 16 points.

> This text will be used to practice changing leading. Increase leading if the line length is longer than average, the typeface has a large x-height, or you are reversing type out of a background.

Note: Notice how the type appears lighter with the added leading.

☐ d. Paste text block a third time, change leading to 10 points.

> This text will be used to practice changing leading. Increase leading if the line length is longer than average, the typeface has a large x-height, or you are reversing type out of a background.

Note: Decreasing the leading makes the type appear darker.

☐ e. Save file.

☐ f. Print page and write "Job Sheet 2—Leading" at the top of the page.

☐ 4. **Practice adjusting letterspacing**

☐ a. Select first text block and **increase** letterspacing 10 units.

> This text will be used to practice changing leading. Increase leading if the line length is longer than average, the typeface has a large x-height, or you are reversing type out of a background.

Note: Additional letterspace changes line breaks and causes an unconnected appearance, lowering readability.

☐ b. Select second text block and **decrease** letterspacing 10 units.

This text will be used to practice changing leading. Increase leading if the line length is longer than average, the typeface has a large x-height, or you are reversing type out of a background.

Note: Decreasing letterspacing causes characters to run together, lowering legibility.

☐ c. Save file.

☐ d. Print page and write "Job Sheet 2—Letterspacing" at the top of the page.

☐ 5. **Practice kerning character pairs**

☐ a. Set the following character sets in 48 point, Helvetica Bold.

TA WA YO

☐ b. Place an insertion point between the characters in the first set "TA" and kern letters for a more pleasing fit.

TA

Note: Kerning is done visually. Use the amount of space between remaining type characters as a guide.

☐ c. Kern remaining "WA" and "YO" character sets.

TA WA YO

☐ d. Save file.

☐ e. Print page and write "Job Sheet 2—Kerning" at the top of the page.

Evaluator's Comments: ______________________________

____

____

____

Objective 17

Job Sheet 2—Select Type Using Guidelines for Readability and Legibility

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Type usage errors were corrected	______
• Readability and legibility guidelines were followed	______

Basic Skills

Reading Critical Thinking Technology

Introduction

It is important to maximize both readability and legibility when choosing typefaces and typestyles and when modifying type elements in EPP documents.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software or word-processing software
- Printer
- Objective 8

Procedure

☐ 1. Start the computer.

☐ 2. Turn on the printer.

☐ 3. Open page-layout or word-processing software.

☐ 4. Create a new document.

☐ 5. Input the document on the following page.

☐ 6. Correct the type usage errors by choosing appropriate fonts including typefaces, type families, and typestyles.

Note: See Objective 8 for readability and legibility issues.

☐ 7. Save file.

☐ 8. Print document and write your name and "Job Sheet 2" on the top of the printed page.

☐ 9. Turn in printed page to your instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Groundhog Job Shadow Day

OVER 10,000 STUDENTS PARTICIPATED IN THIS YEAR'S GROUNDHOG JOB SHADOW DAY ACTIVITIES, ACCORDING TO THE SCHOOL-TO-WORK OFFICE. STUDENTS WORKED ALONGSIDE ADULTS AT MORE THAN 8,000 BUSINESSES.

A variety of professionals were shadowed, including legislators, editors, veterinarians, police officers, computer technicians, and doctors. Students also shadowed various state leaders.

Many of the school- to-work partnerships received positive comments from business partners and also reported increased participation.

DURING GROUNDHOG JOB SHADOW DAY 2000, MANY STUDENTS WERE able to participate in "virtual job shadowing" with partners thousands of miles away. virtual job shadowing allows students to follow various career mentors via the Internet.

Virtual job shadowing was sponsored by an Internet employment firm, which helped promote Groundhog Job Shadow Day by running a series of ads featured during the Super Bowl.

Several national celebrities also signed up to be virtual job shadows. They included a governor, an actor, a professional baseball player, and a politician.

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Objective 18

Job Sheet 3—Perform Font Management Activities

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Folders created correctly	______
• Fonts arranged in correct folders	______
• Font management software operated properly	______

Basic Skills

Reading Critical Thinking Technology

Introduction

Because EPP systems can contain hundreds or thousands of fonts, it is important to use font management software to alleviate the need to search through all of these fonts to find a specific font.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Font management software
- Font management software user's manual

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the font management software and EPP equipment used on-site.

☐ 1. Create a folder called "Type Library" on your hard drive.

☐ 2. In "Type Library" folder create three folders: "In-House Type," "Client Temporary," and "Client Permanent."

☐ 3. Move all fonts licensed to you from the fonts folder on your system to the "In-House Type" folder.

Note: If your computer is a Macintosh, **DO NOT** move the following fonts: Chicago, Geneva, Monaco, and Symbol. These fonts are never used for high-resolution output. They are used to operate your system.

☐ 4. Place any fonts that clients have supplied for document output in the "Client Permanent" folder. You may choose to create individual folders for your regular clients.

☐ 5. Type fonts supplied by walk-in or new clients may be placed in the "Client Temporary" folder.

☐ 6. Open each of the three folders created and arrange fonts in alphabetical order.

☐ 7. Locate and open the font management software.

☐ 8. Create a "Startup Set." This set will contain the fonts you wish to be available to your system each time you start your computer.

☐ 9. Click the "Add" or "Open" button. Find your "In-House Type" folder in the navigation window, and one by one, add the names of the suitcases you want included in your "Startup Set."

☐ 10. Click the "Done" or "Quit" button.

☐ 11. Click the "New Set" button. Name it "In-House Type," the same as the folder you created.

☐ 12. Click the "Add" button, and navigate to your "In-House Type" folder.

☐ 13. Click "Add All" to include entire library, or, "Open" all fonts in folder.

☐ 14. Click "Done" or "Quit" button.

☐ 15. Using the same method, create sets to use for specific clients. Remember, additional sets can be created for job- or client-specific font groupings, and the same fonts can be added to multiple client sets.

☐ 16. Practice opening and closing sets by selecting the set name and clicking "Open" or "Close."

Note: Remember to always close fonts when you are finished with them.

☐ 17. Exit font management software and shut down computer.

Evaluator's Comments: ______________________________

____

____

____

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Objective Sheet

Unit Objective

After completing this unit, the student should be able to identify and apply basic design principles in producing a document. The student should demonstrate these competencies by completing the assignment sheets and job sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to document design with their definitions.
2. Discuss factors to consider when applying principles of document design.
3. State definitions of types of design elements.
4. Match types of graphic treatments with their definitions.
5. Match types of text treatments with their definitions.
6. Match types of graphic enhancements with their definitions.
7. Arrange in order the steps in the design process.
8. Evaluate the design of a magazine ad. (Assignment Sheet 1)
9. Design a single-page flyer. (Assignment Sheet 2)
10. Examine illustration software manual for basic operations. (Assignment Sheet 3)
11. Rescale graphics. (Job Sheet 1)
12. Create a computer-generated grid. (Job Sheet 2)
13. Create a single-page flyer. (Job Sheet 3)
14. Add contrast using special effects type and screen tints. (Job Sheet 4)
15. Create a logo design. (Job Sheet 5)
16. Create stationery utilizing logo design. (Job Sheet 6)
17. Create a spot color brochure. (Job Sheet 7)

Information Sheet

Objective 1

Terms and definitions

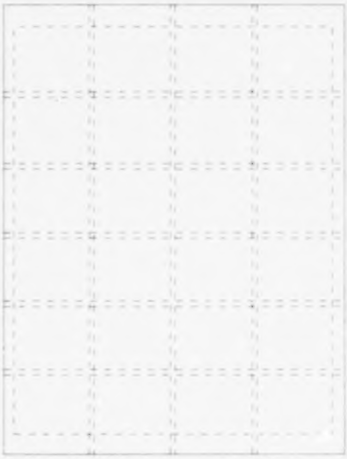
a. **Body type**—Type 12 points in size or smaller

b. **Display type**—Type 14 points in size or larger

c. **Grid**—Nonprinting guidelines used to help you lay out page-design elements consistently

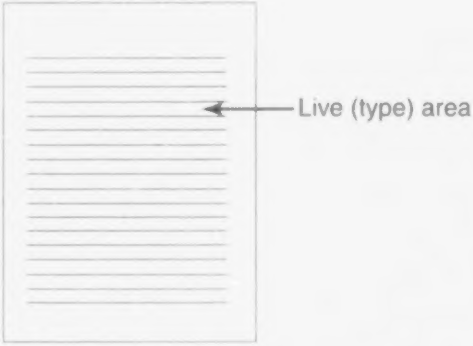
Note: Grids are used to determine the horizontal placement of columns and the vertical placement of headlines, body copy, and graphics.

Figure 1



d. **Live area**—Area of document page where type and graphics appear

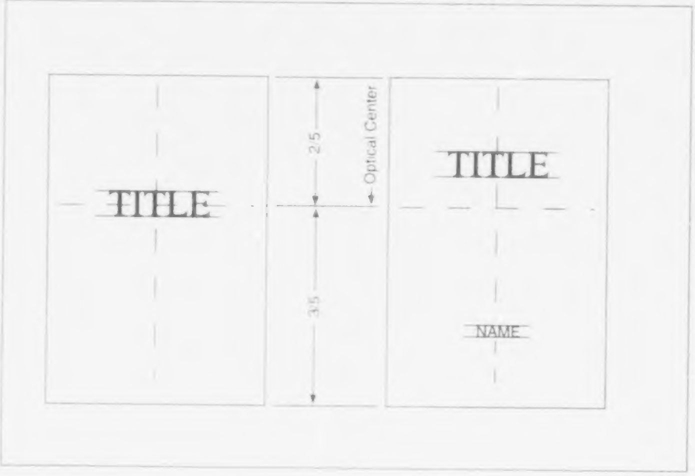
Figure 2



e. **Optical center**—Point at which a reader's eye naturally rests when it first encounters a printed page

Note: The optical center of a design is not a true mathematical center of a page, but rather $^2/_5$ of the way down a page that has been divided into five equal parts. Important design elements are placed at or above the optical center of a page for an aesthetically pleasing design.

Figure 3



Objective 2

Principles of document design and factors to consider when applying them

Note: The design principles discussed in this objective are not listed in order of importance. They are considered *interactive*—each principle should support the other.

a. **Purpose**—Determine the document's purpose and the relative importance of the information you want to communicate

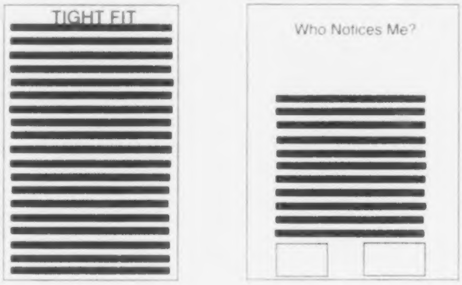
b. **Coherence**—Strive for integration of the design elements you use so that the document's appearance is coherent with its purpose

Note: The success of a design depends on how well each design element relates to the other elements in the design. To create a coherent document design, you must judge the appropriateness of each design element as it relates to the other elements and to the document's purpose.

c. **Proportion**—Determine size of all design elements in relation to their importance

Note: There are no absolutes concerning appropriate proportion in document design. Visualization of a design is important in determining the appropriateness of each design element in the document. For example in Figure 4a, it is easy to see that the large headline cramped into a small space looks out of proportion, and likewise, does the small headline placed in a large space (Figure 4b). See Student Supplement 1.

Figure 4—Improper proportion

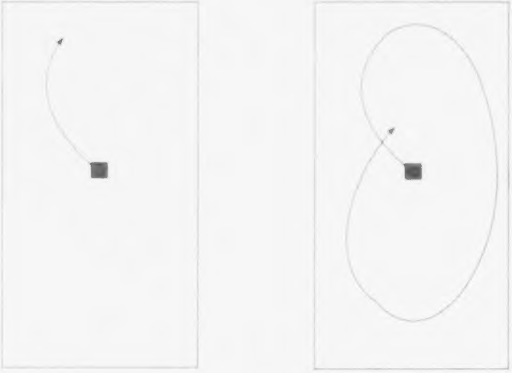


a. b.

d. **Direction** (sequence, movement)—Determine a logical directional pattern for reader's eye movement as he or she reads the document

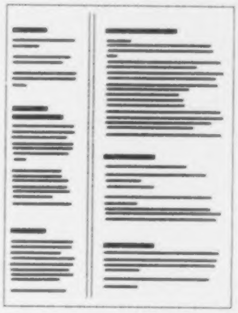
Note: The design elements you use should guide your reader's eye from point to point in the document, usually following a pattern that begins at the optical center of the design and continues in a clockwise direction to the upper left and around to the lower right. See Student Supplement 2.

Figure 5



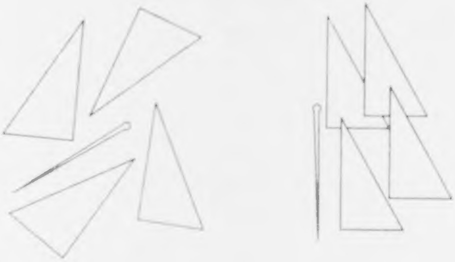
e. **Unity**—Assemble the various design elements so that they fit together as a harmonious unit

Figure 6—Unified elements



Note: In document design, you must create a harmonious unit from a series of individual design elements. A design has unity when the elements appear to be related and held together by a single theme. When design elements are not unified, they appear randomly placed and disjointed. Figure 7a shows an example of a disjointed arrangement, while in Figure 7b, the same elements have been placed so that they seem unified.

Figure 7



a. Disjointed elements

b. Unified elements

f. **Discipline**—Apply design elements in moderation

Note: Discipline may be the most difficult design principle to apply. With EPP, you have a tremendous amount of design features at your fingertips, making it easy to get carried away by using too many of them in one document. Remember, the adage "simple is better" certainly applies to EPP document design.

g. **Contrast**—Decide whether the document's purpose dictates that its design maintain either high or low contrast

Note: *Contrast* refers to the relative amount of space devoted to text, graphics, and white space. Depending upon the purpose of your document, you can create designs of either high or low contrast. For example, advertisements tend to have high contrast—the document design has definite light and dark areas with lots of white space and illustrations. However, business reports tend to have low contrast—there are more dark areas or blocks created with type and less white space used throughout these documents. See Student Supplement 3.

Objective 3

Types of design elements

a. Graphic treatments—Design elements used to visually guide reader's eye from one point to another in document

Examples: Grids, borders, margins, rules, columns

b. Text treatments—Design elements used to organize text so that reader can locate information easily

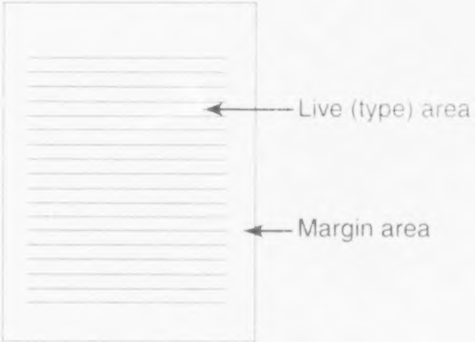
Examples: Headlines, subheads, captions, headers, footers, symbols, jumplines

Objective 4

Types of graphic treatments

a. **Margins**—White space between border and live area of document page

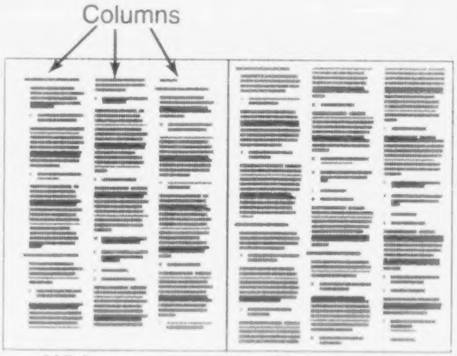
Figure 8



Note: The following are good rules of thumb for determining margin sizes.

- The more white space provided in the margin, the lighter the appearance (higher the contrast) of the document page. See Figure 9a.
- The narrower the margin, the darker the appearance (lower the contrast) of the document page. See Figure 9b.
- Bottom margins are usually larger than top margins; outside margins are usually equal to or slightly larger than top margins.
- Smaller inside margins are usually used for facing pages, since they combine to create a gutter of additional white space.

Figure 9



a. Wide margin b. Narrow margin

b. **Columns**—Invisible lines created by placement and width of lines in text blocks

Note: Columns greatly influence the contrast of a document page. Closely spaced columns tend to create low-contrast pages. Widely spaced columns create more contrast as one column is clearly separated from another by white space. As a general rule, column width is determined by the type size used. See Figure 9.

c. **Rules** (see Student Supplement 4)—Printed horizontal or vertical lines or boxes used to separate one part of a document from another

Note: The following guidelines are often followed when rules are being considered as design elements.

- Vertical rules are often used to separate columns of type.
- Horizontal rules are often used to separate items within a column, such as to divide subheads from blocks of text.
- Thin rules are more appropriate for publications with a lot of copy.
- Thick rules are most effective when set off by white space.
- Boxes are used to enclose or set off information such as self-contained articles that relate to longer feature articles or to set off addresses and phone numbers.

d. **Borders**—Printed or visual lines used to define page outline

Note: Printed borders are lines that outline the document page. Visual borders are created by the edges of columns of text or graphics.

Objective 5

Types of text treatments

a. **Alignment** (see Figure 10)—Arrangement of text flush left, flush right, centered, or justified

Note: The following guidelines are given in relation to the possible uses for text alignment as a design element.

- Ragged-right type set flush left is generally considered easier to read than justified type. Use ragged-right type for an informal, open style created by minimal hyphenation and line endings followed by extra white space.
- Justified type usually requires more hyphenation than ragged-right type, and therefore, is considered more difficult to read. However, justified type is often used in documents requiring the formal style created by lines of equal length with beginning and ending words or successive lines vertically aligned.
- Flush right, ragged-left type is hard to read. Use flush-right, ragged-left type sparingly or only for brief captions or subheads.
- Centered type is often used for headlines but is rarely used for body copy.

Figure 10

Ragged-right type set flush left is generally considered easier to read than justified type. Use ragged-right type for an informal, open style created by minimal hyphenation and line endings followed by extra white space.

Ragged right—flush left

Page-Layout
Software

Flush right

Exciting Careers in the Graphic
Arts Industry

Centered

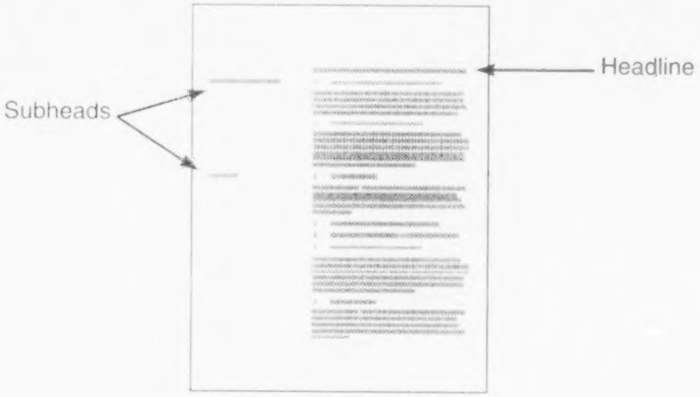
Justified type is often used in documents requiring the formal style created by lines of equal length with beginning and ending words or successive lines aligned vertically.

Justified

b. **Headlines**—Display type over a story or article within a document

Note: Headlines should be as short as possible so that their meaning can be understood quickly, and they should be clearly differentiated from body copy through the use of a visual cue such as a contrasting typeface or the same typeface in a larger size or heavier weight.

Figure 11



c. **Subheads**—Short headlines inside articles or stories within a document

Note: Subheads provide transition between headlines and the body copy of an article or story. They should be set off from the body copy by a visual cue such as their placement, typeface, size, or alignment, but whichever visual cue is selected for the subheads, it should be used consistently throughout a document. See Figure 11.

d. **Captions**—Text accompanying graphics

Note: Captions can be placed to the right of the graphic they describe, or above or below the graphic. Again, whichever caption placement is used, it should be used the same way throughout a document.

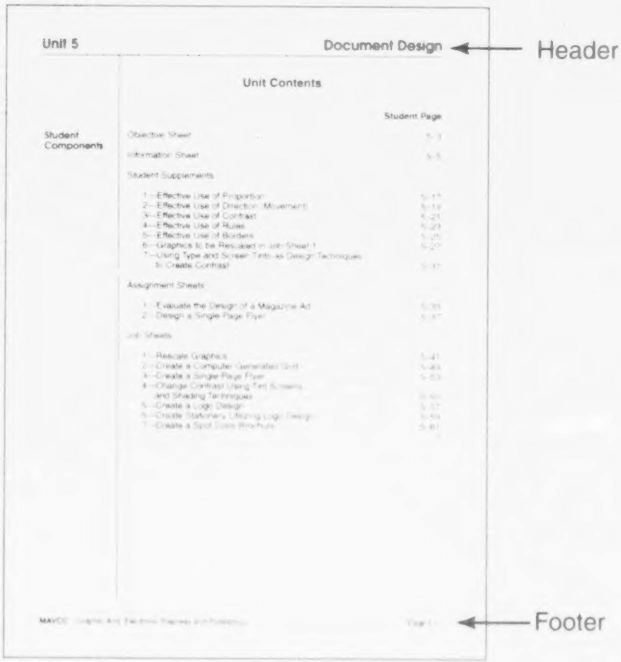
e. **Headers**—Information placed at top of document page

Note: Publication title, chapter titles, and section titles are types of information often presented in headers. See Figure 12.

f. **Footers**—Information placed at bottom of document page

Note: Page numbers frequently appear in footers. See Figure 12.

Figure 12



Unit 5 Document Design

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g. **Symbols**—Asterisks, bullets, and numbers used to organize ideas in lists

Note: Asterisks and bullets are used when all the items in a list are equally important. Letters or numbers are used to show a priority of importance for the items in a list.

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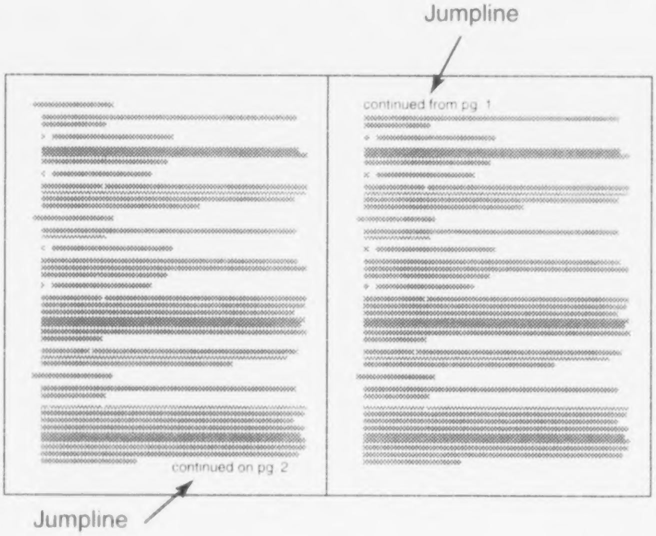
h. **Jumplines**—Information used to tell the reader when an article is continued from one page to another

Figure 13



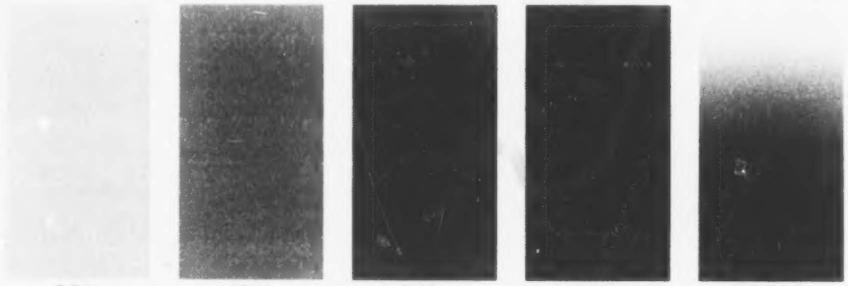
Objective 6

Types of graphic enhancements

a. Electronic clip art—Preproduced electronic artwork (pictures)

b. Screens—Dot patterns in graduated shades of gray

Figure 14



20% Screen | 40% Screen | 60% Screen | 80% Screen | 0-100% Screen

c. Spot color—Color used at specific points to attract the reader's attention

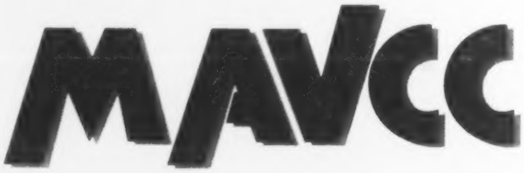
Note: Pantone Matching System (PMS) is the universal method of specifying premixed exact inks for spot color printing.

d. Bleeds—An element (text, graphic, photo, or background) that prints beyond the margins of the paper

Note: *Including bleeds* in a document requires using an "oversize" sheet of paper, printing beyond the margins, and then trimming and discarding the excess paper. This adds additional cost to production and should be considered before determining design specifications.

e. Drop shadows—Gray or black shading added to photos or graphics to give a three-dimensional effect

Figure 15



f. Text wrap—Text with irregular line lengths used to indicate how a graphic relates to a particular section of text

Figure 16

When an activity involving reading is identified, the corresponding icon is placed on the assignment sheet and job sheet. Skills training is further defined by classifying specific skills that are required to complete the exercise.

Objective 7

Steps in the design process

Note: People design documents—computers don't. Follow the design process outlined in this objective to develop quality document designs.

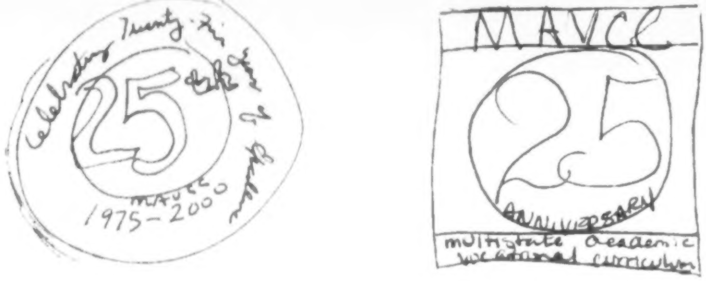
a. Define the project—its purpose and its audience.

Note: Determine the document's purpose and the overall message you are trying to achieve. Develop an idea of the different graphic elements that will be involved in creating this overall message, and then decide an order of importance for those various elements.

b. Create thumbnail sketches (thumbnails).

Note: A *thumbnail sketch* is a small, quick pencil drawing done on paper or computer. Thumbnails should be used to develop and reject ideas as necessary before moving on in the design process. To save time possibly spent in retrying the same design idea several times during this design process, it is a good idea to make notes to yourself about why you rejected a certain design.

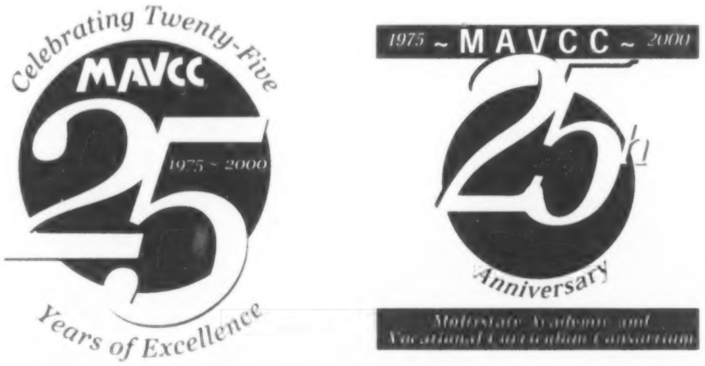
Figure 17—Thumbnail sketch examples


Celebrating Twenty-Five Years of Excellence
25
MAVCC
1975–2000
MAVCC
25
ANNIVERSARY
multistate academic vocational curriculum

c. Create rough layout.

Note: A *rough layout* is a rough mockup of a document laid out on a grid at actual document size. Rough layouts are used to further develop designs you have selected during the second step of the design process. Experienced EPP operators prepare rough layouts on the computer.

Figure 18—Rough layout examples


Celebrating Twenty-Five
MAVCC
25
1975 ~ 2000
Years of Excellence
1975 ~ MAVCC ~ 2000
25th
Anniversary
Multistate Academic and Vocational Curriculum Consortium

d. Prepare computer-generated draft at actual size.

e. Proof, edit, and revise computer-generated draft as necessary.

f. Print final copy.

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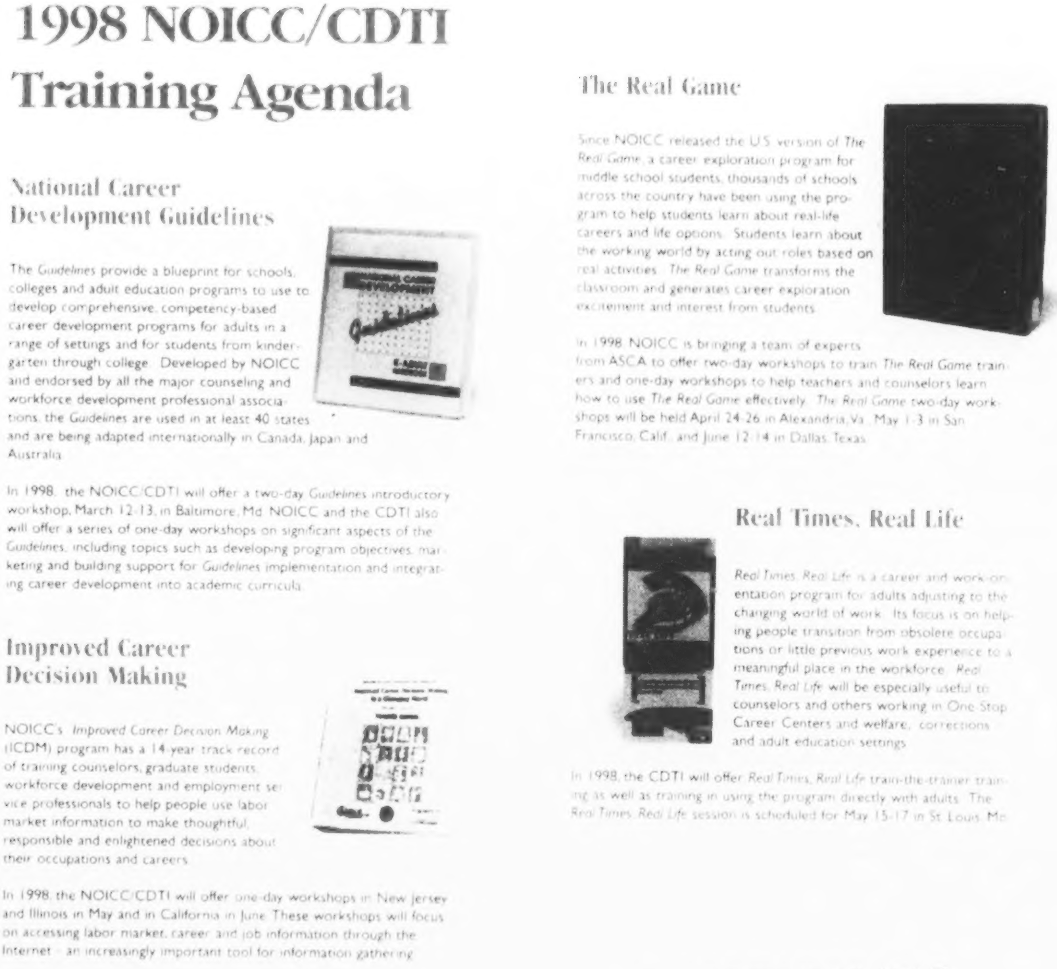
Student Supplement 1—Effective Use of Proportion



1998 NOICC/CDTI Training Agenda

National Career Development Guidelines

The *Guidelines* provide a blueprint for schools, colleges and adult education programs to use to develop comprehensive, competency-based career development programs for adults in a range of settings and for students from kindergarten through college. Developed by NOICC and endorsed by all the major counseling and workforce development professional associations, the *Guidelines* are used in at least 40 states and are being adapted internationally in Canada, Japan and Australia.

In 1998, the NOICC/CDTI will offer a two-day *Guidelines* introductory workshop, March 12-13, in Baltimore, Md. NOICC and the CDTI also will offer a series of one-day workshops on significant aspects of the *Guidelines*, including topics such as developing program objectives, marketing and building support for *Guidelines* implementation and integrating career development into academic curricula.

Improved Career Decision Making

NOICC's *Improved Career Decision Making* (ICDM) program has a 14-year track record of training counselors, graduate students, workforce development and employment service professionals to help people use labor market information to make thoughtful, responsible and enlightened decisions about their occupations and careers.

In 1998, the NOICC/CDTI will offer one-day workshops in New Jersey and Illinois in May and in California in June. These workshops will focus on accessing labor market, career and job information through the Internet - an increasingly important tool for information gathering.

The Real Game

Since NOICC released the U.S. version of *The Real Game*, a career exploration program for middle school students, thousands of schools across the country have been using the program to help students learn about real-life careers and life options. Students learn about the working world by acting out roles based on real activities. *The Real Game* transforms the classroom and generates career exploration excitement and interest from students.

In 1998, NOICC is bringing a team of experts from ASCA to offer two-day workshops to train *The Real Game* trainers and one-day workshops to help teachers and counselors learn how to use *The Real Game* effectively. *The Real Game* two-day workshops will be held April 24-26 in Alexandria, Va., May 1-3 in San Francisco, Calif., and June 12-14 in Dallas, Texas.

Real Times, Real Life

Real Times, Real Life is a career and work-orientation program for adults adjusting to the changing world of work. Its focus is on helping people transition from obsolete occupations or little previous work experience to a meaningful place in the workforce. *Real Times, Real Life* will be especially useful to counselors and others working in One-Stop Career Centers and welfare, corrections and adult education settings.

In 1998, the CDTI will offer *Real Times, Real Life* train-the-trainer training as well as training in using the program directly with adults. The *Real Times, Real Life* session is scheduled for May 15-17 in St. Louis, Mo.

Courtesy of NOICC/CDTI.

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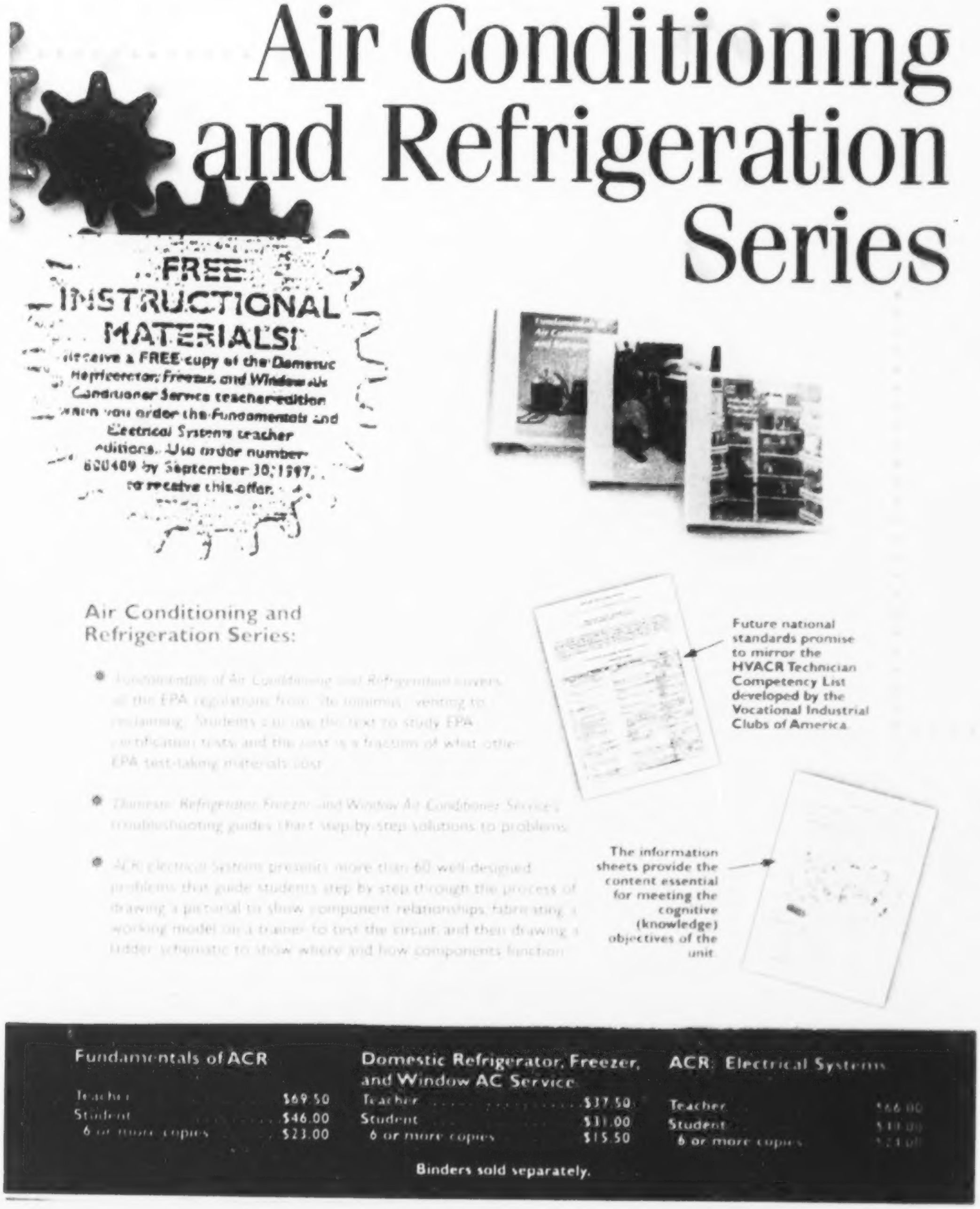
Student Supplement 2—Effective Use of Direction (Movement)



Air Conditioning and Refrigeration Series

FREE INSTRUCTIONAL MATERIALS!

Receive a FREE copy of the *Domestic Refrigerator, Freezer, and Window Air Conditioner Service* teacher edition when you order the *Fundamentals* and *Electrical Systems* teacher editions. Use order number 600409 by September 30, 1997, to receive this offer.

Air Conditioning and Refrigeration Series:

- *Fundamentals of Air Conditioning and Refrigeration* covers all the EPA regulations from "de minimis" venting to reclaiming. Students can use this text to study EPA certification tests and the cost is a fraction of what other EPA test-taking materials cost.
- *Domestic Refrigerator, Freezer, and Window Air Conditioner Service's* troubleshooting guides chart step-by-step solutions to problems.
- *ACR: Electrical Systems* presents more than 60 well-designed problems that guide students step by step through the process of drawing a pictorial to show component relationships, fabricating a working model on a trainer to test the circuit, and then drawing a ladder schematic to show where and how components function.

Future national standards promise to mirror the HVACR Technician Competency List developed by the Vocational Industrial Clubs of America.

The information sheets provide the content essential for meeting the cognitive (knowledge) objectives of the unit.

Fundamentals of ACR		Domestic Refrigerator, Freezer, and Window AC Service		ACR: Electrical Systems	
Teacher	$69.50	Teacher	$37.50	Teacher	$66.00
Student	$46.00	Student	$31.00	Student	$48.00
6 or more copies	$23.00	6 or more copies	$15.50	6 or more copies	$24.00

Binders sold separately.

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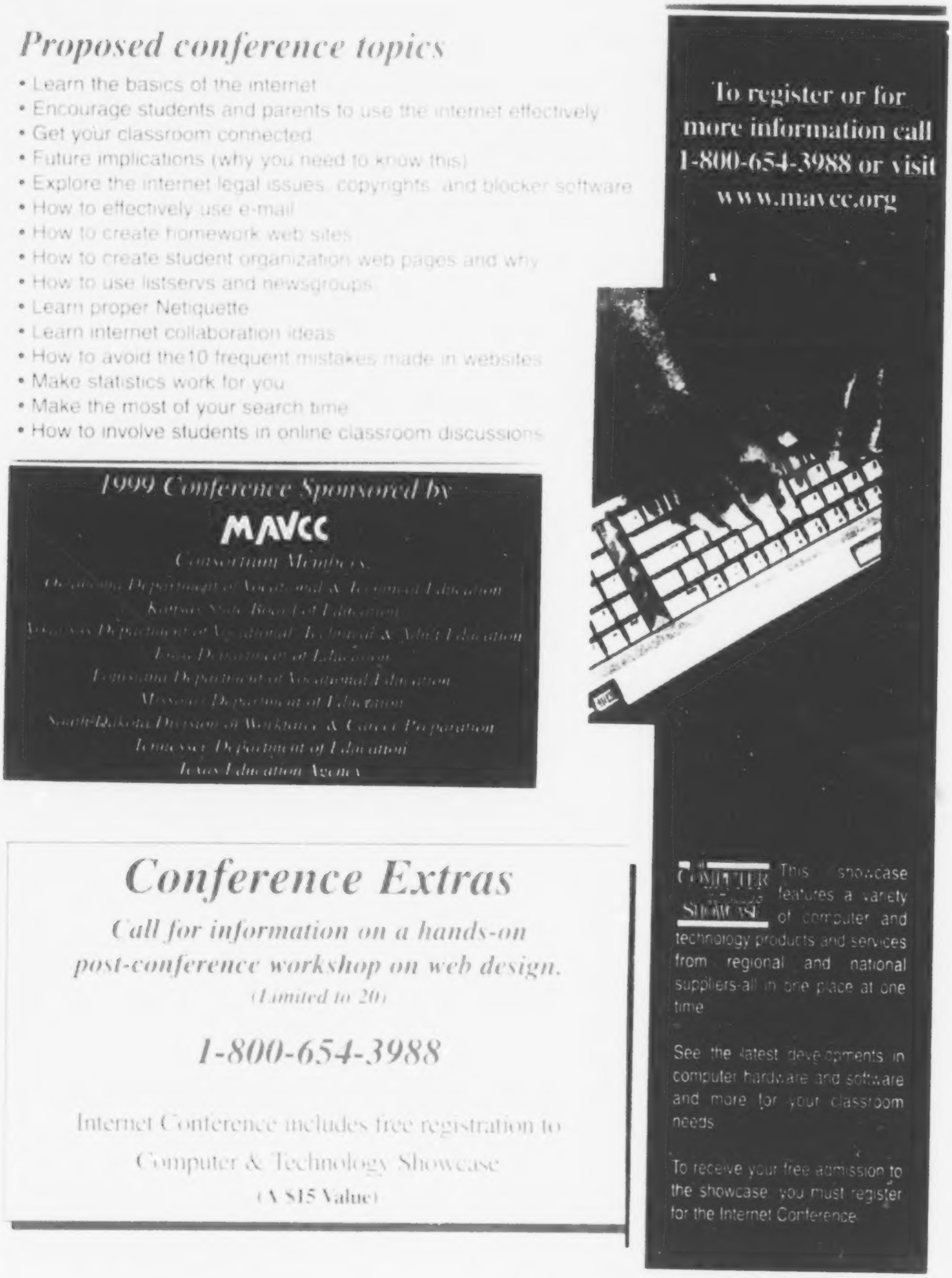
Student Supplement 3—Effective Use of Contrast



Proposed conference topics

- Learn the basics of the internet
- Encourage students and parents to use the internet effectively
- Get your classroom connected
- Future implications (why you need to know this)
- Explore the internet legal issues, copyrights, and blocker software
- How to effectively use e-mail
- How to create homework web sites
- How to create student organization web pages and why
- How to use listservs and newsgroups
- Learn proper Netiquette
- Learn internet collaboration ideas
- How to avoid the10 frequent mistakes made in websites
- Make statistics work for you
- Make the most of your search time
- How to involve students in online classroom discussions

1999 Conference Sponsored by

MAVCC

Consortium Members:
Oklahoma Department of Vocational & Technical Education
Kansas State Board of Education
Arkansas Department of Vocational, Technical & Adult Education
Iowa Department of Education
Louisiana Department of Vocational Education
Missouri Department of Education
South Dakota Division of Workforce & Career Preparation
Tennessee Department of Education
Texas Education Agency

Conference Extras

Call for information on a hands-on post-conference workshop on web design.
(Limited to 20)

1-800-654-3988

Internet Conference includes free registration to Computer & Technology Showcase
(A $15 Value)

To register or for more information call 1-800-654-3988 or visit www.mavcc.org

COMPUTER & TECHNOLOGY SHOWCASE

This showcase features a variety of computer and technology products and services from regional and national suppliers-all in one place at one time.

See the latest developments in computer hardware and software and more for your classroom needs.

To receive your free admission to the showcase, you must register for the Internet Conference.

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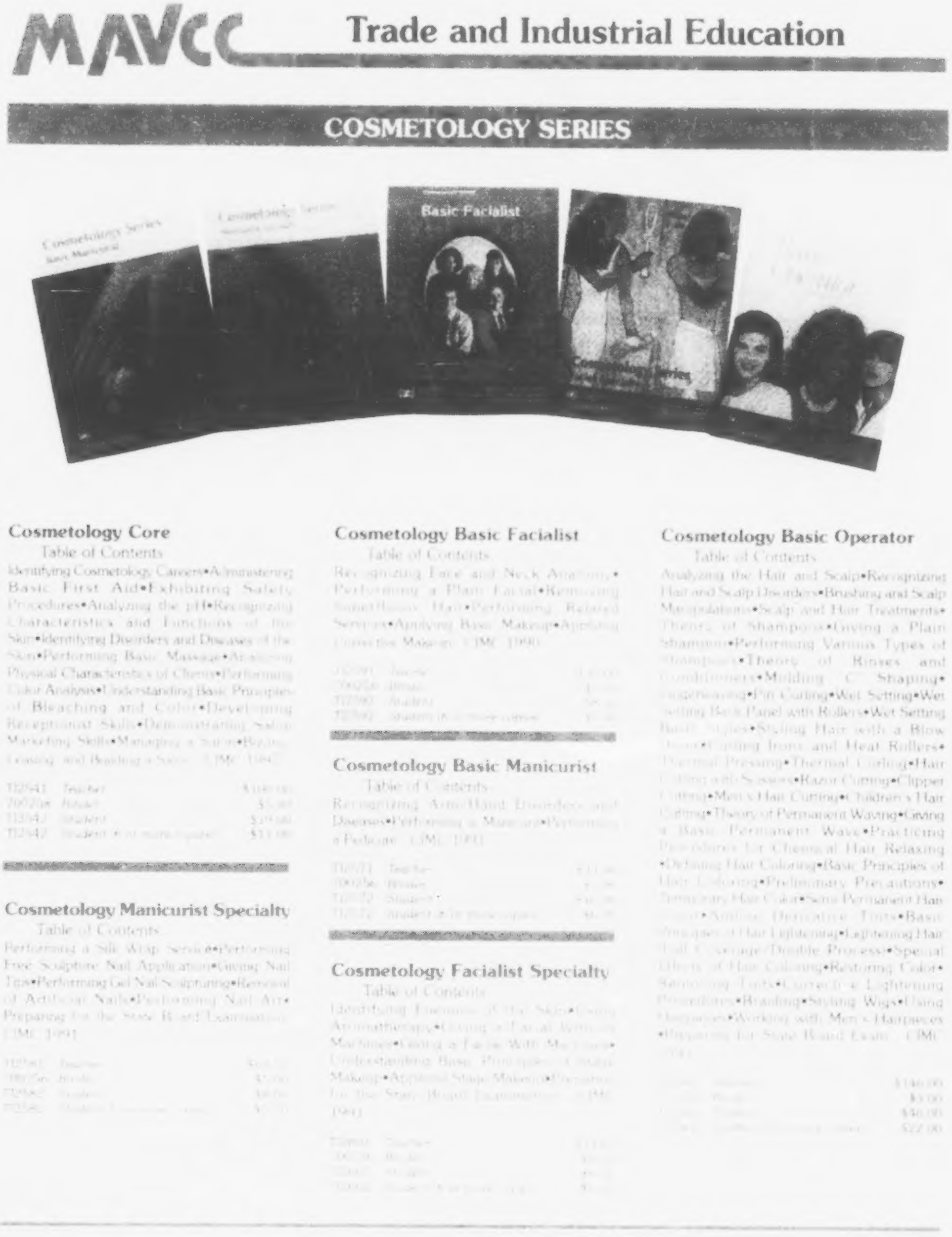
Student Supplement 4—Effective Use of Rules



MAVCC Trade and Industrial Education

COSMETOLOGY SERIES

Cosmetology Core

Table of Contents

Identifying Cosmetology Careers•Administering Basic First Aid•Exhibiting Safety Procedures•Analyzing the pH•Recognizing Characteristics and Functions of the Skin•Identifying Disorders and Diseases of the Skin•Performing Basic Massage•Analyzing Physical Characteristics of Clients•Performing Color Analysis•Understanding Basic Principles of Bleaching and Color•Developing Receptionist Skills•Demonstrating Salon Marketing Skills•Managing a Salon•Buying, Leasing, and Building a Salon (IMC 1992)

Cosmetology Manicurist Specialty

Table of Contents

Performing a Silk Wrap Service•Performing Free Sculpture Nail Application•Giving Nail Tips•Performing Gel Nail Sculpturing•Removal of Artificial Nails•Performing Nail Art•Preparing for the State Board Examination (IMC 1991)

Cosmetology Basic Facialist

Table of Contents

Recognizing Face and Neck Anatomy•Performing a Plain Facial•Removing Superfluous Hair•Performing Related Services•Applying Basic Makeup•Applying Corrective Makeup (IMC 1990)

Cosmetology Basic Manicurist

Table of Contents

Recognizing Arm/Hand Disorders and Diseases•Performing a Manicure•Performing a Pedicure (IMC 1991)

Cosmetology Facialist Specialty

Table of Contents

Identifying Enemies of the Skin•Using Aromatherapy•Giving a Facial Without Machines•Giving a Facial With Machines•Understanding Basic Principles of Stage Makeup•Applying Stage Makeup•Preparing for the State Board Examination (IMC 1991)

Cosmetology Basic Operator

Table of Contents

Analyzing the Hair and Scalp•Recognizing Hair and Scalp Disorders•Brushing and Scalp Manipulations•Scalp and Hair Treatments•Theory of Shampoos•Giving a Plain Shampoo•Performing Various Types of Shampoos•Theory of Rinses and Conditioners•Molding "C" Shaping•Fingerwaving•Pin Curling•Wet Setting•Wet Setting Back Panel with Rollers•Wet Setting Basic Styles•Styling Hair with a Blow Dryer•Curling Irons and Heat Rollers•Thermal Pressing•Thermal Curling•Hair Cutting with Scissors•Razor Cutting•Clipper Cutting•Men's Hair Cutting•Children's Hair Cutting•Theory of Permanent Waving•Giving a Basic Permanent Wave•Practicing Procedures for Chemical Hair Relaxing•Defining Hair Coloring•Basic Principles of Hair Coloring•Preliminary Precautions•Temporary Hair Color•Semi-Permanent Hair Color•Aniline Derivative Tints•Basic Principles of Hair Lightening•Lightening Hair (Full Coverage/Double Process)•Special Effects of Hair Coloring•Restoring Color•Removing Tints•Corrective Lightening Procedures•Braiding•Styling Wigs•Using Hairpieces•Working with Men's Hairpieces•Preparing for State Board Exam (IMC 1991)

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Student Supplement 5—Graphics to be Rescaled in Job Sheet 1

Name ____

Part A

Directions: Use the diagonal-line method to determine the size of graphic A below if it had to be reduced to fit a 2 1/2-inch-wide space. Do your pencil drawing on a separate piece of paper, and then write your answers on the blanks provided below the graphic.

1. Original size of graphic A ______________________________
2. Reduced size of graphic A ______________________________

Student Supplement 5

Part B

Directions: Use the diagonal-line method to determine the size of graphic B below if it had to be enlarged to fit a 6 1/2-inch-wide space. Do your pencil drawing on a separate piece of paper, and then write your answers on the blanks provided below the graphic.

1. Original size of graphic B ______________________

2. Reduced size of graphic B ______________________

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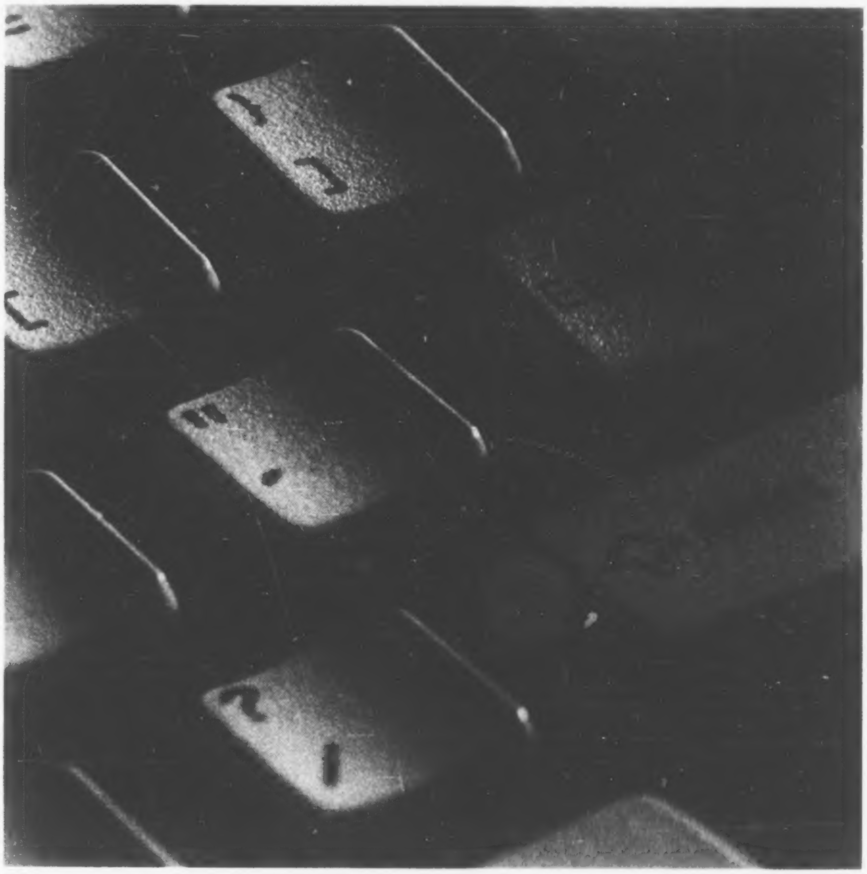
Part C

Directions: Use the proportional-scale method to determine the size of graphic C below if it had to be reduced to fit a 2-inch-wide space. Write your answers on the blanks provided below the graphic.



1. Original size of graphic C ______________________
2. Reduced size of graphic C ______________________

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Student Supplement 6—Using Type and Screen Tints as Design Techniques to Create Contrast

Type Contrast

Note: When contrast is created effectively using type, the reader instantly recognizes the organization of material, its purpose, and how the information flows with a single glance. This is achieved by varying the size, weight, structure, form, and color of type based on the importance of the information being presented.

1. **Size**—To effectively use type size to create contrast, the difference must be obvious. You cannot contrast 12-point body text using 14-point headlines—make the difference count.

USE TYPE TO CREATE

CONTRAST

2. **Weight**—The weight of a typeface refers to the thickness of the strokes. Choose a type family that has a variety of weights from light to ultra- or extra-bold.

Subhead

This paragraph is set in 10-point Stone Serif Regular. The subhead contrasts in 14-point Stone Serif Bold. This serves as a visual clue, making the subheads easy to recognize, thus guiding the reader through the information. Good use of weight as contrast makes it possible for the document to be quickly scanned for an overall take on the message intended.

3. **Reverses**—Creates a professional, powerful, and strong focus. Type that is reversed should be set in a bold sans serif face. Small type and type with fine serifs should be avoided since they tend to lose definition when printed as reverses.

reversed text

...make it powerful!

4. **Structure**—The structure of a typeface is how it is built. Some have no discernable weight changes in stroke, others have a great deal of stroke variation. When combining type from two different families, choose two different categories. For example, never use two scripts on the same page. Instead use a script with a serif or sans serif font.

Rule of Contrast:

never put two typefaces

from the same category

on the same page.

Screen Tints

Note: Screen tints add contrast to document design by adding interest and creating an illusion of depth. Screen tints can be used for graphics as well as type elements.

SCREEN TINTS

for Interest and Contrast

Objective 8

Assignment Sheet 1—Evaluate the Design of a Magazine Ad

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Questionnaire completed correctly, illustrating student comprehension	______
• Student renovation of selected ad shows effort and comprehension	______

Basic Skills

Reading Writing Critical Thinking

Part A—Design Evaluation

Directions

Select from a magazine a full-page ad having art, a headline, and body copy. Describe the ad's purpose and then evaluate the ad's design by writing brief statements about each of the design principles listed.

1. Purpose ____

____

____

____

____

2. Coherence ____

____

____

____

____

3. Proportion

4. Direction

5. Unity

6. Discipline

7. Contrast

Part B—Thumbnails and rough layout

Directions

Complete the following steps in the order indicated below. Write a checkmark on the blank before each step as you complete it.

_____ 1. Using a pencil and tracing paper, trace the magazine ad you selected for Part A of this assignment. Take care to suggest the size, shape, and tone of the art. Letter in the headline. Indicate body copy by ruling parallel lines.

_____ 2. Rearrange the elements in the ad you selected, not necessarily to improve the ad, but to see what other arrangements are possible. Do at least three thumbnails on 8 1/2" x 11" white paper to explore alternative combinations. Be sure your thumbnails are kept in correct proportion.

_____ 3. Choose the thumbnail you like best from step 2, and do a rough layout of it on a grid.

_____ 4. Attach the original ad, your tracing of it, your thumbnails, and rough layout to this assignment sheet and submit the assignment to your instructor for evaluation.

Objective 9

Assignment Sheet 2—Design a Single-Page Flyer

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Three usable thumbnail sketches were turned in	______
• Student turned in original rough layout	______
• Student turned in complete specification sheet for flyer design	______

Basic Skills

Reading Writing Critical Thinking Technology

Materials list

- File saved in Unit 3, Job Sheet 7

Directions

Part A—Create thumbnail sketches

Use the information below to create at least three thumbnail sketches for the design of a single-page flyer. Attach your thumbnail sketches to this page of the assignment sheet when you submit the assignment to your instructor for evaluation.

Flyer Information

Note: In creating your designs, be sure to consider the purpose of the flyer and the audience to whom it will be directed.

- You are creating a single-page flyer to be distributed to the participants of a workshop on EPP techniques. The participants have never used an EPP system.
- The flyer will be distributed to the participants during the workshop speaker's presentation.
- The flyer should contain the speaker's name, address, and telephone number.
- Use the text from the file you created in Unit 3, Job Sheet 7 as the body copy for the flyer. Create appropriate headers and subheads for this text.
- The flyer must contain a graphic illustration such as clip art. The illustration may be enlarged or reduced as you choose.

Assignment Sheet 2

Part B—Complete a rough layout for flyer design

Directions

Using a computer-generated grid, complete a rough layout of one of the thumbnail sketches you completed in Part A of this assignment. Attach your rough layout to this sheet when you submit it to your instructor for evaluation.

Part C—Complete specifications sheet for flyer design

Directions

Fill in the project-specifications sheet on the next page with the specifications you estimate will be required for creating a computer-generated rough layout of the sketches you completed in Part A of this assignment.

Project specifications sheet

1. Page size ______________________________

2. Margins and type area

   Margin sizes: Top __________ Bottom __________

   Inside __________ Outside __________

   Size of type area ______________________________

3. Borders: None ______ Location __________ Size ________

4. Rules: Size __________

5. Column size: Number of columns __________

   Equal or unequal sizes __________

6. Type size: Heads ______ Subheads ________ Body copy ______

7. Type alignment: Justified ______ Centered ______

   Flush right ____ Ragged-right, flush left ________

8. Headers: None ______ Location ________

9. Footers: None ______ Location ________

10. Paragraph divisions: Space between paragraphs ______ Tabs ____

11. Graphics: Size __________ 100% __________

    Enlarged ______ Reduced ________

12. Text wraparound: None ________

    Amount set away from graphic ______________

Objective 10

Assignment Sheet 3—Examine Illustration Software Manual for Basic Operations

Name ______________________ Overall Rating ________

Date ______________________

Evaluation Criteria	**Rating**
• Directions were followed	________
• Instructions were recorded correctly	________

Basic Skills

Reading Writing

Directions

Examine the illustration software manual for the software used on-site. Read the instructions for the following operations and record the instructions for those operations on the blank lines provided below.

1. Select objects, paths, segments, and type ______________________

____

____

2. Combine, duplicate, divide, and edit basic shapes ______________________

____

____

3. Fill, stroke, and change attributes of objects ______________________

____

____

4. Control and adjust anchor points and segments of curves and paths

____

____

____

Assignment Sheet 3

5. Layer creation, assignment, and management

6. Create a tracing layer, autotrace graphic

7. Mirror, scale, rotate, and skew

8. Transparent paint effects

9. Interlocking and intersecting shapes

10. Text and graphic masks

11. Aligning and distributing elements

12. Gradients

13. Patterns

14. Edit, add, remove colors ______________________________

____

____

15. Convert text to paths or create outlines ______________________________

____

____

Objective 11

Job Sheet 1—Rescale Graphics

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Created proportionally scaled graphics	______

Basic Skills

Reading Mathematics

Introduction

This exercise leads the student through a simple geometric method of determining proportional sizes of artwork.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Pencil
- Ruler
- Paper
- Proportional scale
- Student Supplement 5

Procedure

☐ 1. **Procedure for reducing graphics using diagonal-line method**

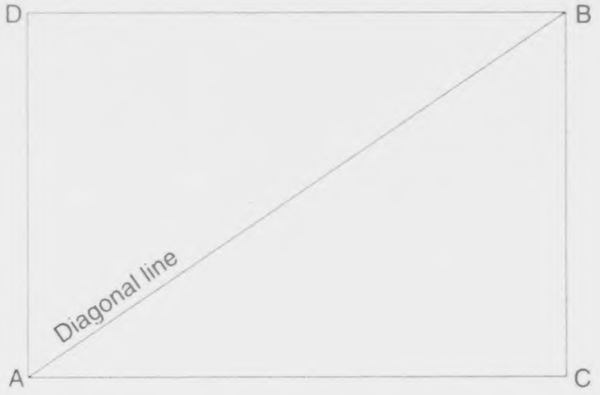
  ☐ a. Measure graphic shown in Part A of Student Supplement 5.

  ☐ b. Label a separate piece of paper "Part A." Use pencil and ruler to draw a rectangle the same size as graphic A.

  ☐ c. Label bottom-left corner of hand-drawn rectangle point A, and upper-right corner point B; label bottom-right corner point C, and upper-left corner point D. (See Figure 1.)

☐ d. Using pencil and ruler, draw a diagonal line from point A to point B, as shown in Figure 1 below.

Figure 1

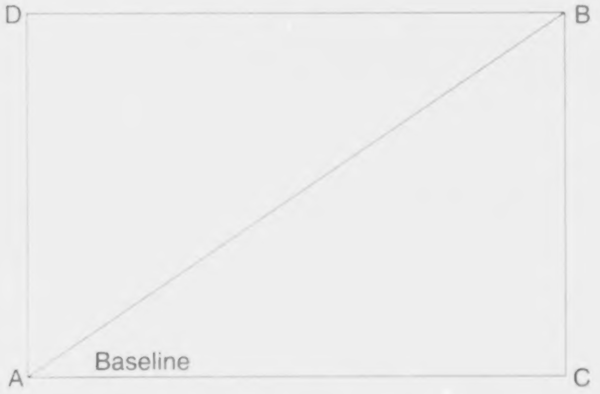


☐ e. Determine width of space available for reduced graphic; see the directions in Part A of Student Supplement 5.

☐ f. Locate baseline of drawing; see line A–C on Figure 2 below.

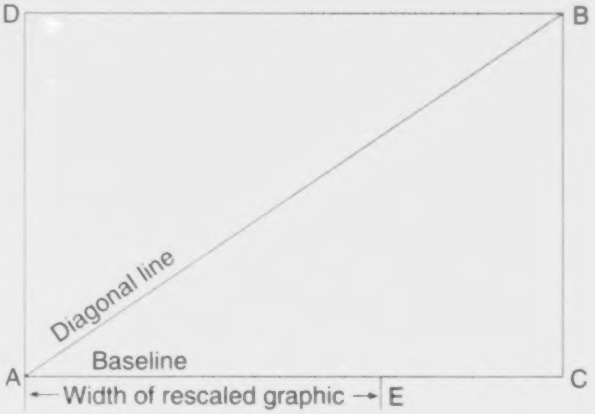
Figure 2

Figure 2



☐ g. Measure desired width of reduced graphic (rescaled graphic); mark that measurement point E on baseline.

Figure 3

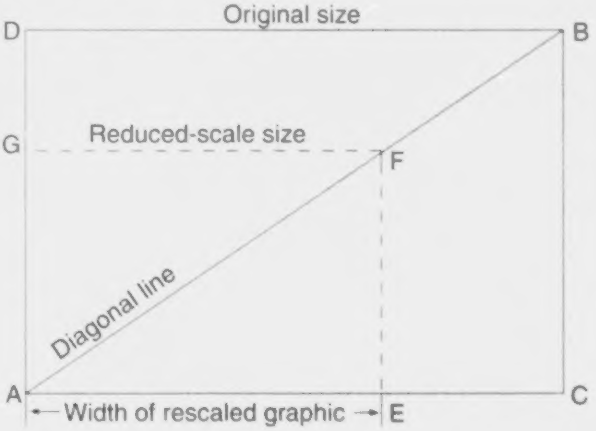

D
B
Diagonal line
Baseline
A
C
Width of rescaled graphic
E

☐ h. From point E, draw a dashed line upward from baseline (at a 90° angle from baseline) until dashed line intersects diagonal line A–B; mark point F at point of intersection. (See Figure 4.)

☐ i. From point F, draw a dashed line parallel to baseline until dashed line intersects line A–D; mark point G at point of intersection. (See Figure 4.)

Note: The rectangle defined by points A, E, F, and G is the reduced-scale size of the graphic with measurements that are in proportion to those of the original. See Figure 4.

Figure 4


Original size
D
B
G
Reduced-scale size
F
Diagonal line
A
C
Width of rescaled graphic
E

☐ j. Fill in the blanks provided in Part A of Student Supplement 5.

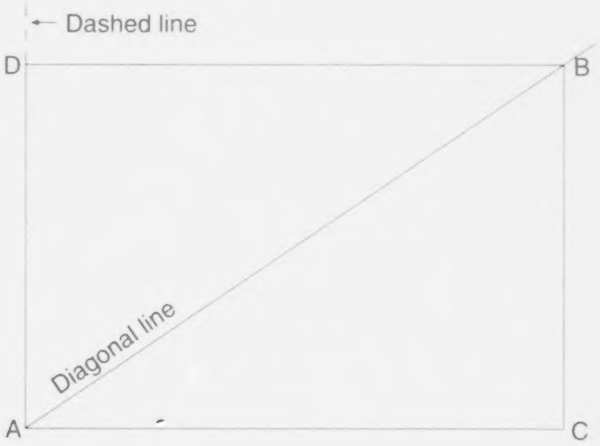
❑ 2. **Procedure for enlarging graphics using diagonal-line method**

- ❑ a. Measure graphic shown in Part B of Student Supplement 5.
- ❑ b. Label a separate piece of paper "Part B." Use pencil and ruler to draw a rectangle the same size as graphic B.
- ❑ c. Label bottom-left corner of hand-drawn rectangle point A, and upper-right corner point B; label bottom-right corner point C, and upper-left corner point D. (See Figure 5.)

  Note: The shape of the examples shown in Figures 5 through 7 in this job sheet are not representative of the shape of the graphic to be enlarged in Part B of the student supplement; however, the steps given will still apply.

- ❑ d. Using pencil and ruler, draw a diagonal line from point A **through** and past point B, and then draw a dashed line that extends upward from point D along line A–D. (See Figure 5.)

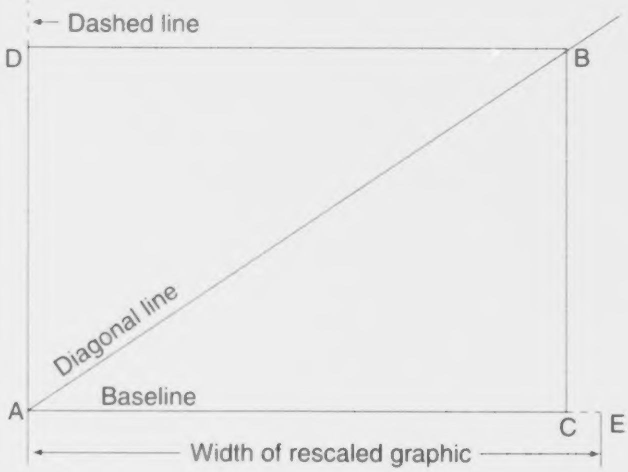
Figure 5



- ❑ e. Determine width of the space available for the enlarged graphic; see the directions in Part B of Student Supplement 5.
- ❑ f. Locate baseline of drawing; see line A–C on Figure 6 on the following page.

☐ g. Measure desired width of enlarged graphic (rescaled graphic); draw dashed line where measurement extends past point C; mark end of dashed line point E. (See Figure 6.)

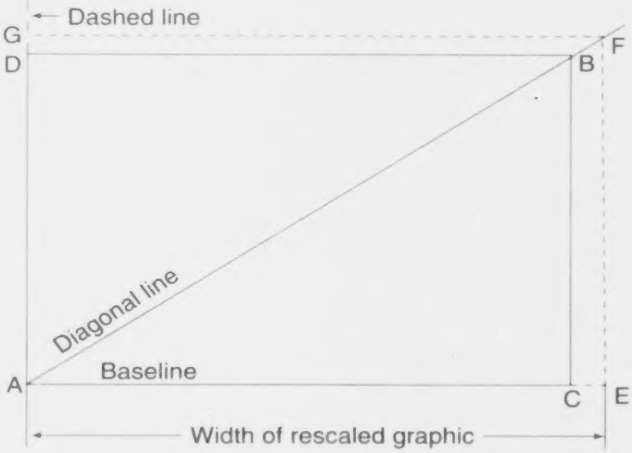
Figure 6


Dashed line
D
B
Diagonal line
Baseline
A
C
E
Width of rescaled graphic

☐ h. From point E, draw a dashed line upward from baseline (at a 90° angle from baseline) until dashed line intersects diagonal line A–B; mark point F at point of intersection. (See Figure 7.)

Note: The rectangle defined by points A, E, F, and G is the enlarged-scale size of the graphic with measurements that are in proportion to those of the original. See Figure 7.

Figure 7


Dashed line
G
D
F
B
Diagonal line
Baseline
A
C
E
Width of rescaled graphic

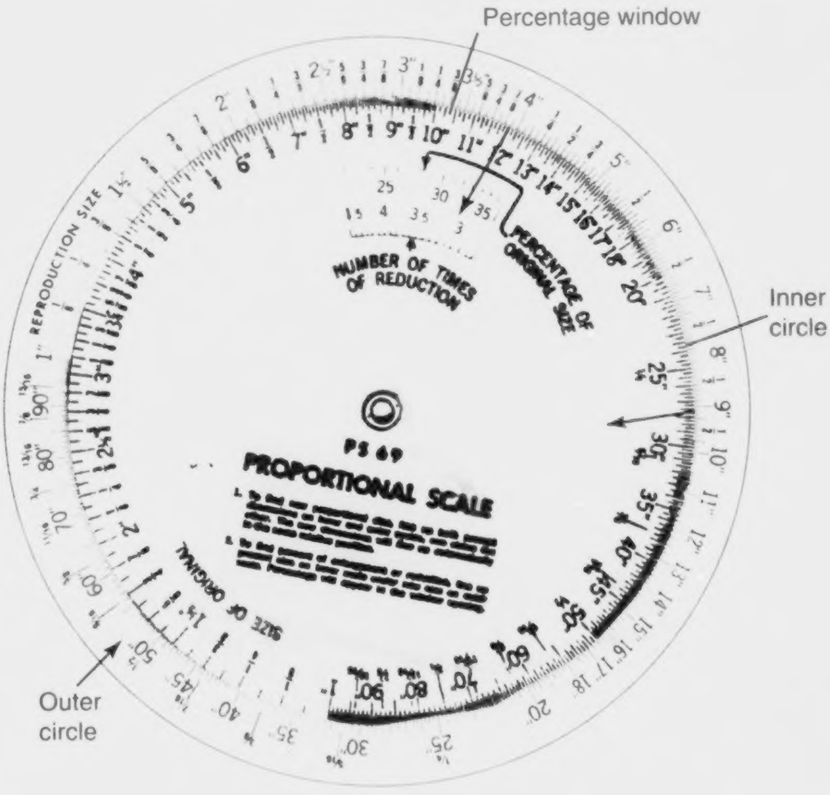
☐ i. Fill in the blanks provided in Part B of Student Supplement 5.

☐ 4. **Procedure for rescaling (enlarging and reducing) graphics using proportional-scale method**

- ☐ a. Measure graphic shown in Part C of Student Supplement 5.
- ☐ b. Determine width and height of space available for rescaled graphic; see the directions in Part C of the student supplement.
- ☐ c. Locate inner circle of proportional scale (See Figure 8.); find the width of the original graphic on inner circle.
- ☐ d. Locate outer circle of proportional scale (See Figure 8.); find the width of rescaled graphic on outer circle.
- ☐ e. Move inner circle of proportional scale until width of original graphic aligns with width of rescaled graphic.

  Note: Notice the percentage shown in the percentage window. (See Figure 8.)

Figure 8—Proportional scale



Percentage window
Inner circle
Outer circle
REPRODUCTION SIZE
NUMBER OF TIMES OF REDUCTION
PERCENTAGE OF ORIGINAL SIZE
PS 69
PROPORTIONAL SCALE
SIZE OF ORIGINAL

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☐ f. Holding inner and outer circles of scale in place, locate height of original graphic on inner circle.

☐ g. Read measurement on outer circle that aligns with height measurement on inner circle.

Note: The measurement on the outer circle is the proportional height of the rescaled graphic.

☐ h. Record rescaled-graphic size on blanks provided in Part C of Student Supplement 5.

☐ i. Submit Student Supplement 5 to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 12

Job Sheet 2—Create a Computer-Generated Grid

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Used proper margins	______
• Prepared vertical and horizontal lines in proper proportion	______
• Prepared vertical and horizontal gutters in proper proportion	______

Basic Skills

Reading Technology

Introduction

This exercise gives the student the opportunity to create a grid, by which further EPP documents can be properly placed on pages.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Turn on printer.

☐ 3. Open page-layout software.

☐ 4. Open new file.

☐ 5. Select margin settings.

☐ 6. Drag rulers or draw vertical lines to divide page into columns of equal width.

Note: Page-layout software generally offers nonprinting grid lines that can be pulled into place and moved at any time. They differ from column settings in that column settings tend to remain in permanent positions.

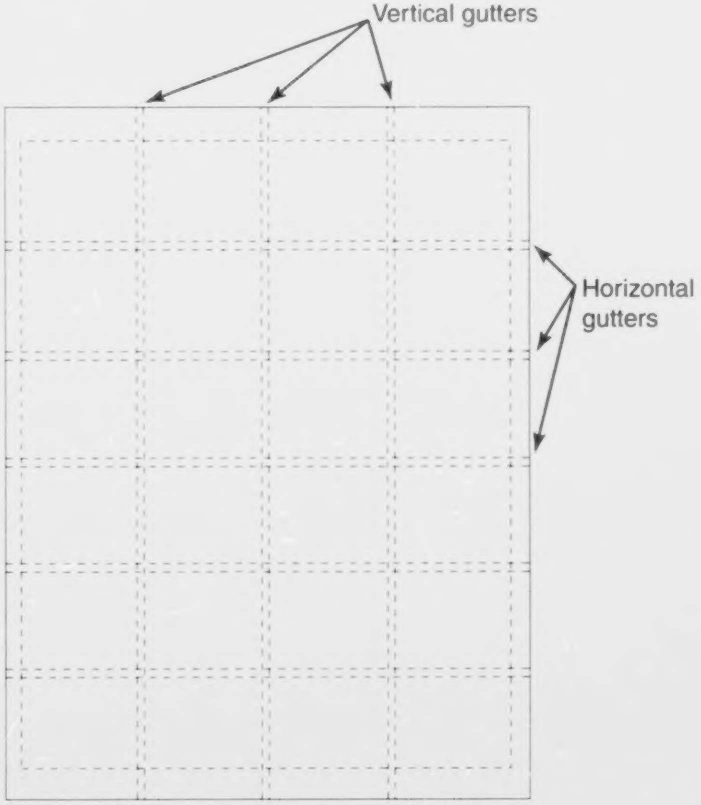
☐ 7. Add horizontal lines to divide the columns equally and achieve a uniform pattern of spaces.

Note: Spaces measuring 3.5 inches wide and 2.5 inches deep allow a good proportion for placing graphics.

☐ 8. Create narrow vertical column gutters by adding another set of parallel vertical lines. (See Figure 1.)

☐ 9. Complete grid by creating narrow horizontal gutters at same width as vertical gutters created in step 8. (See Figure 1.)

Figure 1



☐ 10. Save file.

☐ 11. Print page and write your name and "Job Sheet 2" on top of printed page.

☐ 12. Close file, exit page-layout software, and turn off computer and printer.

☐ 13. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 13

Job Sheet 3—Create a Single-Page Flyer

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Used proper margins, borders, column sizes, type sizes, alignment, graphic resizing	______
• Printed a final copy	______

Basic Skills

Reading Technology

Introduction

This exercise gives the student the opportunity to use skills and knowledge gained in previous assignments to create a finished product.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Word-processing software
- Electronic clip art
- Printer
- Assignment Sheet 2

Procedure

☐ 1. Start the computer.

☐ 2. Turn on printer.

☐ 3. Open word-processing software.

☐ 4. Open page-layout software.

☐ 5. Using thumbnails, rough layout, and specifications determined in Assignment Sheet 2, prepare file with appropriate margins, columns, etc.

☐ 6. Place text file.

☐ 7. Place electronic clip art.

Note: Resize graphic as necessary.

☐ 8. Edit document and revise as necessary.

☐ 9. Save file.

☐ 10. Print document and write your name and "Job Sheet 3" at the top of the printed page.

☐ 11. Close file.

☐ 12. Exit page-layout software and word-processing software.

☐ 13. Turn off computer, printer, and scanner.

☐ 14. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 14

Job Sheet 4—Add Contrast Using Special Effects Type and Screen Tints

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Used contrast design techniques to produce an attractive flyer with visual interest	______
• Printed a final copy	______

Basic Skills

Reading Technology

Introduction

This exercise allows the student to create contrast in design utilizing screen tints and shading techniques to create a visually interesting design.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- Electronic clip art or computer-generated graphics
- Objective 6
- File created in Job Sheet 3
- Student Supplement 6

Procedure

☐ 1. Start the computer.

☐ 2. Turn on printer.

☐ 3. Open page-layout software.

☐ 4. Open the file for the completed flyer created in Job Sheet 3.

☐ 5. Add special effects or curved type to enhance text.

Note: See Objective 6 for examples of special effects type.

☐ 6. Modify flyer using type contrast and screen tints to add visual interest. Refer to Student Supplement 6.

☐ 7. Save file.

☐ 8. Print document and write your name and "Job Sheet 4" on top of printed page.

☐ 9. Close file, exit page-layout software, and turn off computer and printer.

☐ 10. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 15

Job Sheet 5—Create a Logo Design

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Created and submitted three thumbnail sketches	______
• Created logo design that included specified elements	______
• Saved logo in correct file format	______
• Printed document	______

Basic Skills

Reading Technology

Introduction

This exercise allows the student to create a logo design using computer software.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Illustration software
- Printer
- Electronic clip art or computer-generated graphics
- Pencil or pen

Procedure

☐ 1. Create at least three thumbnail sketches for your company logo that include your name or initials. The logo could also include a graphic element to represent your company. Attach your thumbnail sketches to this page when you submit the job to your instructor for evaluation.

Note: Keep in mind that it is best to keep designs simple.

☐ 2. Boot computer.

☐ 3. Turn on printer.

☐ 4. Open illustration software.

☐ 5. Recreate the design you selected from your thumbnail sketches using electronic clip art, computer generated graphics, or typographic elements.

☐ 6. Save your work in a file format that is compatible with your page-layout software.

Note: Check your page-layout software documentation to verify acceptable file formats.

☐ 7. Print logo and write your name and "Job Sheet 5" at the top of the printed page.

☐ 8. Close file and exit illustration software.

☐ 9. Submit job including thumbnail sketches to instructor for evaluation.

Evaluator's Comments: ______________________________

Objective 16

Job Sheet 6—Create Stationery Utilizing Logo Design

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Created and submitted three thumbnail sketches each for letterhead, envelope, and business card designs	______
• Set up page-layout files using correct document sizes and margins	______
• Imported logo design into documents	______
• Stationery documents contain specified information	______
• Rules of good typography followed	______
• Design principles followed	______
• Printed documents	______

Basic Skills

Reading Technology

Introduction

This exercise gives the student the opportunity to create company stationery combining typographic elements and the logo design created in Job Sheet 5.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- Pencil or pen
- File created in Job Sheet 5

Procedure

☐ 1. Create at least three thumbnail sketches for your company letterhead, envelope, and business card using the logo created in Job Sheet 5. Include your company name, address, telephone number, fax number, e-mail address, etc.

Note: There should be an overall unity of the stationery pieces. Layout, typestyles, and overall document design should maintain consistency. Phone, fax, and e-mail information is usually omitted when designing envelopes.

☐ 2. Start the computer.

☐ 3. Turn on printer.

☐ 4. Open page-layout software.

☐ 5. Using the selected thumbnail design, set up your letterhead for an 8$^{1}/_{2}$″ x 11″ document and use appropriate margin settings.

☐ 6. Import logo, size, and position.

☐ 7. Typeset remaining letterhead information and format.

☐ 8. Save file.

☐ 9. Print file and write your name and "Job Sheet 6—Job 1" at the top of the printed page.

☐ 10. Create business envelope document for a #10 business envelope. Document size should be 9 $^{1}/_{2}$″ x 4 $^{1}/_{8}$″.

☐ 11. Import logo, size, and position.

☐ 12. Typeset remaining information and format.

☐ 13. Save file.

☐ 14. Print file and write your name and "Job Sheet 6—Job 2" at the top of the printed page.

☐ 15. Create business card document. Document size should be 3 $^{1}/_{2}$″ x 2″.

☐ 16. Import logo, size, and position.

☐ 17. Typeset remaining information and format.

☐ 18. Save file.

☐ 19. Print file and write your name and "Job Sheet 6—Job 3" at the top of the printed page.

☐ 20. Close file and exit page-layout software.

☐ 21. Submit jobs 1 through 3 including thumbnail sketches to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 17

Job Sheet 7—Create a Spot-Color Brochure

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• Scanned graphic correctly	
• Created and submitted three thumbnail sketches	
• Traced and colorized graphic correctly	
• Saved graphic in correct file format	
• Document set-up specifications correct	
• Imported text and graphics correctly	
• Demonstrated good use of typographic rules	
• Followed design principles	
• Printed documents	

Basic Skills

Reading Technology

Introduction

This exercise allows the student to design a brochure utilizing scans, spot color graphic, and text elements.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Illustration software
- Graphic to be scanned (provided by instructor)
- Scanner
- Printer
- Pencil or pen
- Unit 3, Job Sheet 7

Note: Refer to Unit 6, "Scanning" for information on scanning graphics.

Procedure

☐ 1. Create three thumbnail sketches for a letter size, tri-fold brochure using the body text, heads, subheads, and graphic from the flyer you designed in Assignment Sheet 2 for the brochure content.

☐ 2. Scan a graphic and save for placement in illustration software.

Note: See your instructor for the graphic to be scanned.

☐ 3. Open and trace graphic using illustration software.

☐ 4. Fill and stroke graphic using a specified ink color. You may wish to include screen tints and shadows in your graphic.

☐ 5. Save graphic in format for importing into page-layout software.

☐ 6. Print document and write your name and "Job Sheet 7—Job 1" at the top of the printed page.

☐ 7. Exit illustration software.

☐ 8. Open page-layout software.

☐ 9. Create a new document for a letter size, tri-fold brochure.

☐ 10. Import text from the file saved in Unit 3, Job Sheet 7. You may wish to copy the text and paste into brochure document.

☐ 11. Flow and format text as required.

☐ 12. Use spot color as desired for typographic emphasis.

☐ 13. Import graphic.

☐ 14. Add any new graphic or design elements necessary to enhance brochure design.

☐ 15. Save file.

☐ 16. Print document and write your name and "Job Sheet 7—Job 2" on the back of each page.

☐ 17. Close file and exit page-layout software.

☐ 18. Submit Jobs 1 and 2 to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective Sheet

Unit Objective

After completing this unit, the student should be able to operate a desktop scanner and use image-editing software to touch up and prepare art for print. The student should demonstrate these competencies by completing the assignment sheets and job sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to scanning with their definitions.
2. Match types of scanners with their descriptions.
3. Select true statements concerning the common features of flatbed scanners.
4. Match types of scanning software with their descriptions.
5. Match file formats for scanned images with their descriptions.
6. Match PPI, DPI, and LPI with their descriptions.
7. Complete statements concerning factors that determine scanning resolution.
8. Select true statements concerning scanning resolutions and scanner settings.
9. Distinguish among when to scan images as grayscale, line art, and RGB.
10. Complete statements concerning converting RGB scanned images to CMYK for print.
11. Select true statements concerning moiré patterns and how to avoid them.
12. List the scanning guidelines.
13. Match the common features of image-editing software with their descriptions.
14. Research copyright law in relation to scanned materials. (Assignment Sheet 1)
15. Examine scanning hardware and software available in your classroom. (Assignment Sheet 2)
16. Identify scanner and scan settings. (Assignment Sheet 3)

17. Examine image-editing software manual for basic operations. (Assignment Sheet 4)
18. Scan line art. (Job Sheet 1)
19. Scan a continuous tone image. (Job Sheet 2)
20. Use image-editing software to touch up and prepare line art scan for print. (Job Sheet 3)
21. Use image-editing software to touch up and prepare continuous tone scan for print. (Job Sheet 4)
22. Calibrate and assess a desktop scanner. (Job Sheet 5)
23. Scan a continuous tone color original. (Job Sheet 6)
24. Convert a continuous tone color scan to grayscale. (Job Sheet 7)
25. Perform basic color correction. (Job Sheet 8)
26. Use image-editing software to perform basic image cloning. (Job Sheet 9)
27. Calibrate a color monitor. (Job Sheet 10)
28. Place scanned graphics/photos in page-layout document. (Job Sheet 11)
29. Scan text using OCR software. (Job Sheet 12)

Information Sheet

Objective 1

Terms and definitions

a. **Binary**—Method for working with numbers based on only two digits: 1 and 0, each of which means either "on" or "off"

Note: When saving files in EPS format, if you are given an option to save the data as "binary" or "ASCII" encoding the difference is simple: binary-encoded images are half the size of ASCII-encoded bitmaps. ASCII encoding is sometimes useful when transferring files over networks or when printing via serial cables.

b. **Bitmap**—An image composed of tiny individual dots called pixels

c. **Dithering**—Method used in graphics applications of mixing different sizes and colors (or gray tones) of pixels on the screen that trick your eye into thinking you see a totally new color

Note: Dithering is also called *diffusion* or *diffusion dithering*.

d. **Gamma**—A measure of the contrast that affects the mid-level grays (midtones); can be adjusted without significantly affecting the shadows and highlights in an image

e. **Halftone**—Pattern used as the line screen when printing a grayscale image

Note: The term "halftone" refers to changing values in a photograph to black and white dots, half the tone that was in the original photo. Halftone screens can be made up of round or elliptical dots, lines, squares, crosses, or other shapes depending on the effect desired.

f. **Lossy compression**—JPEG compression software that selects details that are important to the image and discards the rest

g. **Pixel** (picture element)—Hundreds of thousands of spots (pixels) of light that compose a computer monitor

Note: Any image that is scanned, taken with a digital camera, or created in an image-editing program is made up of pixels.

h. **Pixelation**—Refers to condition where each pixel in an image becomes visible because of a low resolution image

i. **Posterization**—A photographic effect in which the number of gray levels in an image is reduced to achieve a poster-like effect

j. **Raster image**—Image that has been scanned, taken with a digital camera, or created in an image-editing program such as Adobe Photoshop; rasters are made up of pixels

k. **Resolution**—The density of dots or pixels on a page or monitor usually measured in dots per inch (dpi)

l. **Scanner**—A digitizing device that converts art or photos into an electronic bitmap form

m. **Screen**—Pattern of dots used to make a halftone or tint, measured in percentages, with 10-percent being very light and 100-percent being totally black

n. **Stochastic screening**—Screened images that have very small dots of the same or varying sizes and varying distances between dots, corresponding to the tone values independent of screen angles and screen ruling; avoids creating moiré patterns by randomly arranging the placement of dots

Note: Stochastic screening is also called *frequency modulated screening* or *FM screening*.

o. **Vector graphic**—Image made up of independent lines, shapes, or objects that are each defined by mathematical formulas

Note: Vector graphics are created in illustration software such as Adobe Illustrator or Macromedia FreeHand.

p. **Virtual memory**—Free space on a computer's hard disk to be used when adequate RAM memory is not available to work with large images or files

Note: All computers do not have virtual memory.

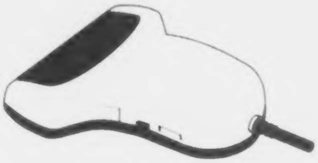
Objective 2

Types of scanners

a. **Handheld scanner**—Used by holding scanner in your hand and dragging it across an image; may be used for scanning images to trace in another application or to insert as a placeholder in a layout; scans are not of sufficient quality for professional-level printing and publishing

Note: Handheld scanners are often small enough to pack in a briefcase, making them excellent for scanning library material and government records.

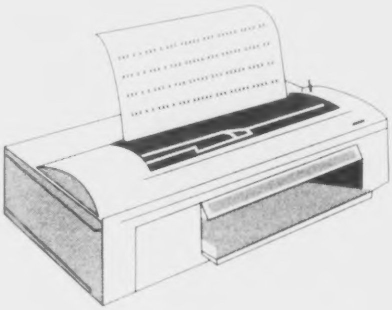
Figure 1



b. **Sheetfed scanner**—Uses a roller mechanism to pull a sheet of paper over a stationary optical device and reads the image for use on the computer; better than hand-held scanners in quality, but should not be used for high-end print production.

Note: Sheetfed scanners sometimes serve also as a fax, color printer, and scanner.

Figure 2

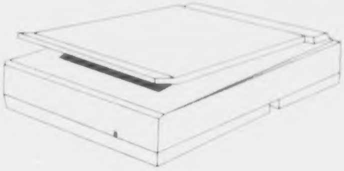


c. **Flatbed scanner**—Most common type of desktop scanner; resembles the top of a copy machine; can handle reflective art and some have adapters for transparent media; can be used to scan paper images as well as small objects such as keys, pencils, fabric swatches, etc.

Note: Flatbed scanners are a quick, inexpensive substitute for photography.

- **Single-pass flatbed scanner**—Captures all the RGB colors in an image by moving the light source over the image one time; three times faster than a three-pass flatbed scanner
- **Three-pass flatbed scanner**—Uses three passes to capture color data, one pass each for red, green, and blue

Figure 3



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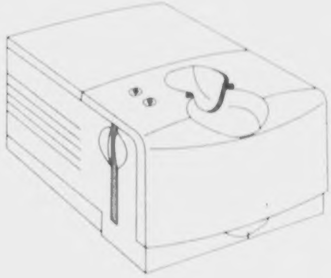
d. **Slide scanner**—Specially made for scanning 35mm slides; uses extremely high resolutions to provide enough detail so the image can be enlarged to fill a full page without causing pixelation

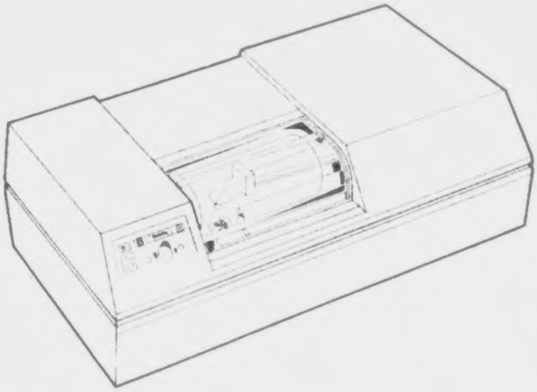
Note: Many flatbed scanners have optional adapters that can be purchased and attached to scan slides and transparencies, although these do not result in the same high-quality image as a dedicated slide scanner.

Figure 4



e. **Drum scanner**—An image is wrapped around a transparent cylinder which rotates as the light is focused on the image during scanning; highest quality and most expensive scanner; reserved for only the most high-end work

Figure 5—Desktop drum scanner



Objective 3

Common features of flatbed scanners

a. **Optical resolution**—How much detail the scanner can capture; it is expressed as two numbers, such as 600 x 1200 ppi.

- The first number is the number of pixels per inch of information the scanner captures in the horizontal direction. The higher the number of pixels per inch, the more detail the scanner can capture.
- The second number refers to the number of steps the scanner head moves along the vertical direction.

b. **Interpolated or enhanced resolution**—Scanner software guesses the values of pixels, increasing the resolution; much higher than the optical resolution

Example: A scanner with an optical resolution of 600 x 1200 ppi might have an interpolated resolution of 9600 ppi. Interpolation does not actually increase the detail in an image. It means the image may be enlarged without obvious pixelation.

c. **Bit depth**—How much color information the scanner can capture

- 1-bit scanners capture only line art images.
- 8-bit scanners capture grayscale.
- 24-bit scanners capture RGB images.
- 30- or 36-bit scanners are used to scan higher quality graphics.

  Note: 30- or 36-bit scanners can capture extra information about the colors of an image. This information is helpful during the color and tonal correction of an image.

d. **CCDs** (charged-coupled devices)—Small sensors in the scanner compare the electrical charge of the light before and after it hits the copy and stores the data

e. **Dynamic range**—A scale of relative darkness which runs from 0.0 to 4.0 with 0.0 being pure light and 4.0 the density of carbon black

Note: Flatbed scanners have a dynamic range of 1.8 to 2.0.

f. **Speed**—How fast a scanner previews and processes scans

Note: Single-pass scanners are faster, but three-pass scanners are more accurate.

Information Sheet

Objective 4

Types of scanning software

a. **Scanner software**—A standalone program packaged with scanners that is used to control the scanner; scanner software is typically packaged with software modules or plug-ins that work within other applications allowing images to be scanned directly into Photoshop, QuarkXPress, or PageMaker

Note: Although images can be scanned directly into page-layout programs, it is generally not recommended because many adjustments cannot be made to the image in page-layout programs.

b. **Image-editing software**—Software used to edit or change a photographic image

Examples: Adobe Photoshop, MetaCreations Painter, Corel Photo-Paint, and Jasc Paint Shop Pro

c. **OCR software**—Optical Character Recognition (OCR) software used to scan text into a computer not as a graphic, but actually as letters, words, and sentences using pattern matching and feature extraction

Objective 5

File formats for scanned images

a. **BMP** (Windows Bitmap)—Used primarily to create images for the Windows monitor

Note: BMPs should not be used for files that will be professionally output.

b. **DCS** (Desktop Color Separation)—Variation of the EPS format that creates five separate files (cyan, magenta, yellow, black, and a preview for placement) that must accompany the page-layout document for film separations to be output

Note: Always check with your service bureau or printer to determine if they prefer files to be saved in the DCS format.

c. **EPS** (Encapsulated PostScript)—Used generally as a vector format, but sometimes used as a raster format

- Photoshop duotones can only be saved in the raster EPS format.
- EPS files contain information that can't be saved with TIFFs, such as special halftone screens and line screens, clipping paths, and desktop color separations (DCS).
- The EPS format provides several preview options when importing that image into another software application. Preview options vary according to the computer platform used.
- When working in a cross-platform environment, save the image with a TIFF preview. This is important because an EPS file with a TIFF preview can be read by all Windows-based software that import EPS files and most page-layout programs on the Macintosh platform.

d. **JPEG** (Joint Photographic Experts Group)—Lossy compression format that reduces the file size of an image; used primarily for photographic images

Note: Some stock photo companies save their images with JPEG compression. When using stock photos for printed publications, first open the photo in an image-editing program and save it as either a TIFF or EPS file.

e. **PDF** (Portable Document Format)—Compression scheme that embeds all the necessary information to view a single document or an entire publication

- PDF files are commonly used for transferring documents to clients for proofing, because they do not need to have the software application the document was created in, the fonts used, or the graphic files imported to view the document on their computer.
- Many print shops accept customer files saved in the PDF format. This alleviates the need to package fonts and graphics with the print job.
- PDF files always look great on the computer monitor and can be printed as well. Many companies now package software documentation as PDF files on the software CD. This allows computer users to print the software manuals.

f. **PICT** (abbreviation for "picture")—Created for images on the first Macintosh system; can contain both vector and raster information

- PICT files are useful if used only on the monitor.
- PICTs are likely to cause printing problems on PostScript and high-resolution printers.

g. **TIFF** (Tagged Image File Format)—Raster (bitmapped) file format that is extremely flexible

- TIFF is the best format for files that will be transferred between Windows and Macintosh platforms.
- Almost every raster program can save in the TIFF format.
- TIFFs can be imported into page layout and illustration applications and can be CMYK, RGB, grayscale, index, or bitmap formats at any bit depth and resolution.

Objective 6

PPI, DPI, and LPI

a. **PPI** (Pixels per inch)—Measurement of input resolution

b. **DPI** (Dots per inch)—Measurement of the resolution at which an output device, such as an imagesetter or printer, displays text and graphics

Example: Laser printers are normally 300 dpi or more; imagesetters are normally 1200 dpi or more

c. **LPI** (Lines per inch)—Measurement of the screen frequency or resolution of a halftone image ranging from 65 lpi to 200 lpi

Note: LPI is also referred to as *line screen* or *screen frequency*. Printing presses reproduce photographs and artwork using line screens. Different jobs such as magazines, books, newspapers, or brochures are printed with different line screens.

Objective 7

Factors that determine scanning resolution

a. The key to determining the correct resolution for scanning is knowing the **target output resolution** (if the document is to be photocopied) or the **line screen required for the final reproduction process** (if the document will be printed on a printing press).

Note: Ask the print company responsible for producing the printed document what line screen they recommend for your project. This is very important because line screens vary greatly depending on the size and quality of the press and the paper used.

b. Formula for scanning grayscale and color images

Line screen for target output x 2 = Input resolution (scanned resolution)

Example: 133 lpi x 2 = 266 ppi

c. Formula for scanning continuous tone images when scanned image is to be enlarged

(LPI x 2) x Enlargement = Scanned image size (dpi)

Example: If the final size of an image will be 4 x 8 inches and the original image is 2 x 4 inches, the size of the image will be increased by 200%. To obtain enough information when scanning to produce the desired quality, multiply the input resolution (ppi) by a factor of 2.

[133 lpi x 2] x 2 (or 200%) = 532 ppi

Note: It is perfectly safe to resize an image when you scan it. You should **not** resize an image after scanning unless you adjust the scanned resolution (ppi) to compensate for the change in image resolution (dpi) when scaled. It is not recommended to resize images in page-layout software.

d. The resolution used to scan line art varies depending on the thickness of the lines and the amount of detail the art contains.

Note: Line art is typically 1-bit. When scanning line art the "times two" formula used for continuous tone images does not hold true. The resolution will need to be increased if the lines are very fine or the art contains screened areas in order to pick up as many black pixels as possible. If the lines are coarse or thick, a lower resolution may suffice. Experiment with various resolutions to determine the best setting for each piece on an individual basis.

Objective 8

Scanning resolutions and scanner settings

Scanning resolutions and scanner settings are dependent on many factors including the paper stock the document is to be printed on, the quality of the press, the type of image being scanned, and the quality desired for the final output.

a. **Image type**—Scanning resolutions are affected by whether the image being scanned is line art with fine/thin lines, or a color photograph being reproduced as grayscale in a general brochure, or process color in a high quality magazine.

Image/Document Type	Resolution	Scanner
Line art (adjustments necessary based on line thickness and detail)	600 lpi	Flatbed
Photographic images (grayscale and color)	2 x lpi	Flatbed
Color photographic images (to be reproduced as process colors in high quality magazine or art book)	2 x lpi	Drum

b. **Paper type, line screen, and resolution**—Because the scan resolution is determined by the quality of the final printed piece, including the type of paper the document is to be printed on and the line screen of the printing press, you should always call the print shop and ask what line screen they want you to use.

Reproduction Process/Paper Type	Line Screen	Scan Resolution
Laser print/Copy machine (Black-and-white flyers or interoffice documents)	65–85 lpi	130–170
Newspaper (newsprint)	85–120 lpi	170–240
Quick-print shop, copy shop (newsletters, brochures, forms, flyers)	100–120 lpi	200–240
Newsprint magazines	100–120 lpi	200–240
Offset printing/Quality text or coated	133–150 lpi	266–300
Glossy magazines/Coated stock (Annual reports, magazines, process color publications, high-quality brochures)	150–175 lpi	300–350
Museum-quality art books	175–200 lpi	350–400

c. **Paper and dot gain**—When wet ink hits the paper, the absorbency of the paper and speed of the press cause the halftone dots to bleed or spread.

Note: Dot gain results in a darkening of the overall image. Dot gain has the worst effect on the midtones.

Press and Paper Type	Dot Gain Percentage
Web press, coated stock	15–25%
Sheetfed press, coated stock	10–15%
Sheetfed press, uncoated stock	18–25%
Web press, newsprint	30–40%

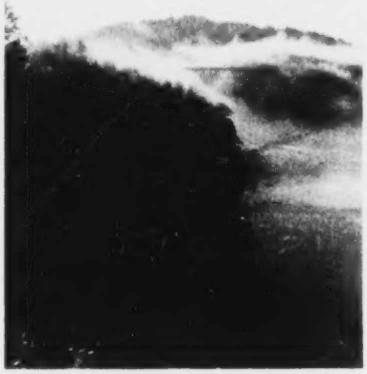
Objective 9

Scanning grayscale, line art, and RGB

a. **Grayscale** (continuous tone image)—A raster image (8-bit) where each dot on the screen can register up to 256 shades of gray, creating the illusion of a continuous tone image

- Scan black-and-white photographs.
- Scan illustrations with various shades of gray (such as pencil or charcoal drawings).
- Scan color photos that will be reproduced in black and white.

Figure 6—Example of grayscale image

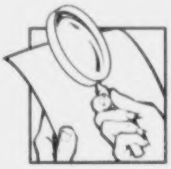


b. **Line art**—A drawing that contains no grays or middle tones

- Scan signatures and any drawings that have smooth edges.
- Line art should be scanned at a higher resolution in order to pick up fine details.
- 600 ppi is optimal resolution for scanning line art.

Figure 7—Examples of line art

John Hancock



c. **RGB** (red, green, blue)—Color mode consisting of the additive primary colors (red, green, and blue) that create white when combined

- Scan any color photograph or artwork that will be displayed on the computer or reproduced in CMYK color for print production

Objective 10

Converting RGB scanned images to CMYK for print

a. All images when scanned in color are in RGB mode.

b. When printing images in process colors, convert images to CMYK then place them into a page-layout or illustration application to prepare them for printing.

c. RGB images are smaller. Some effects and filters in image-editing programs are only available in the RGB mode.

d. Converting between RGB and CMYK modes causes some loss of information.

e. Because of these factors, make the conversion process the last thing you do before saving your image for printing.

Objective 11

Moiré patterns and how to avoid them

a. A moiré pattern is an unwanted grid-like pattern that usually occurs when a printed image is scanned and reproduced a second time.

b. Avoid scanning an image that was already printed on paper. The combination of the original screen in the printing process and the dot screen when the image is reprinted will cause a moiré pattern.

c. Some scanning software applications have a descreen feature. When applied to a scanned image, this feature minimizes the printed screen thus reducing the moiré pattern.

d. Graphics software sets the correct screen angles for color separations to avoid creating moiré patterns.

Note: In four-color process printing each color has an assigned angle: cyan is assigned a 105 degree angle, magenta a 75 degree angle, black a 45 degree angle, and yellow is printed at a 90 degree angle. Notice that each color is printed at a different screen angle.

Objective 12

Scanning guidelines

a. Clean the glass—Small scratches, dust, and fingerprints produce a low quality scan.

Note: Check your scanner documentation for the cleaning liquids and materials that are safe to use for cleaning your scanner.

b. Handle art carefully—Avoid touching artwork and photo surfaces; handle by the edges to avoid scratches and fingerprints

c. Straighten image—Use the edge of the glass to visually align the image to obtain the straightest scan possible.

Note: The best scan is achieved in the center of the scanner image area since the optical quality of the glass is better in the center. You may wish to align the image on a blank sheet of paper before placing in the scanner to make aligning the image easier.

d. Avoid bumps and vibrations—While the image is being scanned avoid jostling or bumping the scanner to keep the light source constant.

Objective 13

Common features of image-editing software

a. **Brightness/Contrast**—Command that offers the least amount of control over the tonal range of an image because the adjustment affects the entire image; does not allow individual channels to be adjusted within a document

b. **Color balance**—Command that changes the mixture of colors in a color image, providing generalized color correction

c. **Curves**—Command that provides the most sophisticated controls of the tonal adjustment tools; provides for setup to 16 points across the tonal range of an image including the black and white points and the midtones

d. **Equalize**—Command that redistributes the brightness values of the pixels in an image so that they more evenly represent the entire range of brightness levels; finds the brightest (white) and darkest (black) values and distributes the intermediate pixel values evenly throughout the grayscale

e. **Histogram**—Graph in Adobe Photoshop that shows how the pixels' values are distributed in an image and whether the image contains enough detail in the shadows, the midtones, and the highlights to produce a good correction

f. **Hue/Saturation**—Command used to adjust and enhance the hue, saturation, and brightness of individual color components in an image

g. **Invert**—Command that makes a positive black-and-white image negative

h. **Levels**—Command used to control the tonal balance of an image by setting the lightest and darkest point in the image, affecting the entire image, a selection, or a specific channel within an image; provides for the individual adjustment of the highlights, midtones, and shadows of an image

i. **Posterize**—Command that indicates the number of tonal levels (or brightness values) for each channel in an image and then maps pixels to the closest matching level; useful for creating special effects

j. **Threshold**—Command that converts grayscale or color images to high-contrast, black-and-white images

k. **Unsharp mask**—Filter used to correct blurring that occurs during photographing, scanning, resampling, or printing an image

Objective 14

Assignment Sheet 1—Research Copyright Law in Relation to Scanned Materials

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Questions answered correctly	______

Basic Skills

Reading Writing

Directions

Using the Internet, legal guidelines for graphic artists, trade publications, and periodicals, answer the following questions on copyright law in relation to scanned materials.

1. How do you know if you can scan items printed in a magazine or book?

2. When can you scan photographs taken by a professional photographer?

3. How do you obtain permission to use an image?

4. Can you scan currency, legal documents, licenses, etc.?

Objective 15

Assignment Sheet 2—Examine Scanning Hardware and Software Available in Your Classroom

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Information is accurate	______

Basic Skills

Reading Writing Critical Thinking

Directions

Examine the scanning hardware and software available in your classroom, and answer the following questions. Refer to the user's manuals for the scanner and software as necessary.

Part A—Scanner

1. What brand and type of scanners are available in your classroom?

   Brand ______________________

   Type: Hand-held Sheet-fed Flatbed Drum Slide

2. What is the optical resolution of the scanner? ________ x ________

3. Does your scanner have an interpolated resolution? __________

   If yes, what is that resolution? ______________

4. Does your scanner have a transparency adapter? __________

5. What is the bit depth of your scanner? ______________

6. If your scanner is a flatbed color scanner, is it a single- or three-pass scanner? ______________

7. What liquid does the manufacturer recommend you use to clean the scanner glass? ______________

Assignment Sheet 2

Part B—Software

1. What software does your scanner use? ____________________

   ____

2. Did your scanner come with OCR software? ________________

3. Does the manufacturer supply a plug-in for Photoshop scanning? ____

   If so, locate all software components necessary to access your scanner from within Photoshop.

4. Which of the following features are available in your scanning software?

Resolution choices	Actual resolution (input) Target resolution (output)
Color modes	Line art Grayscale Color (RGB) Color (CMYK)
Scaling (image sizing)	Yes No
Sharpening	Yes No
Contrast	Yes No
Brightness	Yes No
Descreen	Yes No
Color adjustments	Yes No

Other ____

____

____

____

Objective 16

Assignment Sheet 3—Identify Scanner and Scan Settings

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Identified appropriate scanner, resolution, and scan mode for each project	______

Basic Skills

Reading Mathematics Critical Thinking

Materials list

- Calculator (optional)
- Pen or pencil

Directions

Identify the appropriate scanner, resolution, and scan mode required for each of the projects on the next page.

Assignment Sheet 3

Projects	Type of Scanner	Resolution	Scan Mode
A grayscale photo to be printed in a magazine on newsprint at 85 lpi			
A color photo of a building to be printed at 150 lpi in a CMYK brochure on coated paper			
Drawing of a logo that will be traced in an illustration program			
A black-and-white photo clipped from a newspaper that will be reprinted in a newsletter on uncoated 70# text at 133 lpi			
Color photographs of an artist's portfolio pieces to be reproduced in an art book on coated paper at 200 lpi			
Company logo that is part of a newsletter where the final output will be printed on a 600 dpi laser printer on laserprint paper			
The CEO's signature to print with a guarantee policy on a flyer to be printed at 100 lpi on uncoated stock			

Objective 17

Assignment Sheet 4—Examine Image-Editing Software Manual for Basic Operations

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	**Rating**
• Directions were followed	______
• Instructions were recorded correctly	______

Basic Skills

Reading Writing

Directions

Examine the image-editing software manual for the software used on-site. Read the instructions for the following operations and record the instructions for those operations on the blank lines provided below.

1. Acquire/Import ______________________

2. Levels ______________________

3. Adjust curves ______________________

4. Gaussian blur ______________________

Assignment Sheet 4

5. Unsharp mask

6. Posterize

7. Hue/Saturation

8. Color balance

9. Equalize

10. Brightness/Contrast

11. Invert

12. Feather

13. Adjustment layer

14. Quick masks ______________________________

____

____

15. Layer masks ______________________________

____

____

16. Loading/Colorizing selection ______________________________

____

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17. Clipping paths ______________________________

____

____

18. Clipping groups ______________________________

____

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Objective 18

Job Sheet 1—Scan Line Art

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	**Rating**
• Directions were followed	
• Line art scanned correctly	
• Correct color mode selected	
• Line art scanned at correct resolution	
• Corrections made to scanned image as necessary	

Basic Skills

Reading Technology

Introduction

This job sheet will familiarize the student with how to operate a computer, scanner, and scanning software to scan line art and how to select the correct resolution, color mode, and special settings for line art.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Scanner
- Scanning software and user's manual
- Printer
- Line art (provided by instructor)
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the scanner and scanning software used on-site.

☐ 1. Turn on scanner.

☐ 2. Start the computer.

☐ 3. Open scanning software.

☐ 4. Prepare scanner for optimal image scanning.

Note: Be sure to check for fingerprints, dust, etc.

☐ 5. Obtain line art sample from instructor.

- ☐ 6. Place line art on glass for scanning. Make sure the image is straight.
- ☐ 7. Select the "line art" color mode and a resolution of 1200 ppi.
- ☐ 8. Select "Preview," if available, and adjust selection area to include only the image.
- ☐ 9. Cut out as much white paper around the image as possible to decrease file size.
- ☐ 10. Make any scanner level corrections necessary, adjusting the tonal, sharpness, or brightness settings. Resample (preview) until you achieve the best image.
- ☐ 11. Acquire your scan.
- ☐ 12. Save the scan as "lineart" in the TIFF image format.
- ☐ 13. Print document and write your name and "Job Sheet 1" on the top of the printed page.
- ☐ 14. Close file, exit software, and turn off computer, printer, and scanner.
- ☐ 15. Submit job to instructor for evaluation.

Evaluator's Comments: ____________________

____

____

Objective 19

Job Sheet 2—Scan a Continuous Tone Image

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Photograph scanned correctly	______
• Correct color mode selected	______
• Photograph scanned at correct resolution	______
• Corrections made to scanned image as necessary	______

Basic Skills

Reading Technology

Introduction

This job sheet will familiarize the student with how to operate a computer, scanner, and scanning software to scan a continuous tone image and how to select the appropriate resolution, color mode, and special settings.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Scanner
- Scanning software and user's manual
- Printer
- Black-and-white photograph (provided by instructor)
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the scanner and scanning software used on-site.

☐ 1. Turn on scanner.

☐ 2. Start the computer.

☐ 3. Open scanning software.

☐ 4. Prepare scanner for optimal image scanning.

Note: Be sure to check for fingerprints, dust, etc.

☐ 5. Obtain black-and-white photograph from your instructor.

☐ 6. Place black-and-white photograph on the scanner glass for scanning, making sure the image is straight.

☐ 7. Select the "grayscale" color mode and a resolution of 266 ppi.

Note: This image will be printed at 133 lpi.

☐ 8. Select "Preview," if available, and adjust selection area to include only the image.

☐ 9. Cut out as much white paper around the image as possible to decrease file size.

☐ 10. Make any scanner level corrections necessary adjusting the tonal, sharpness, or brightness setting. Resample (preview) until you achieve the best image.

☐ 11. Acquire your scan.

☐ 12. Save the scan as "grayscale" in the TIFF image format.

☐ 13. Print document and write your name and "Job Sheet 2" on the top of the printed page.

☐ 14. Close file, exit software, and turn off computer, printer, and scanner.

☐ 15. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 20

Job Sheet 3—Use Image-Editing Software to Touch Up and Prepare Line Art Scan for Print

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Used image-editing tools properly	______
• Printed line art is clean	______

Basic Skills

Reading Technology

Introduction

Scanned line art will often contain specks, spots, and other undesirable information that must be corrected to obtain a clean, printable image. This job sheet will take the student through the steps involved in this process.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- Printer
- Pencil or pen
- File created in Job Sheet 1

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open Photoshop or other image-editing software.

☐ 3. Open the file "lineart.tif" created in Job Sheet 1.

☐ 4. Enlarge the line art in Photoshop to a 1:1 ratio (100%) by double-clicking the magnifying glass tool.

Note: This allows you to get a firm look at the details of the image you have scanned.

☐ 5. Move through the image, screen by screen from top to bottom, examining the image for specks (black pixels in white areas) or white spots (white pixels in black areas).

☐ 6. Clean up the image by double-clicking the Pencil tool to open the Pencil Tool Options box. Select the Auto Erase box.

Note: Auto Erase works by replacing any point you click with the pencil tool with the foreground color. Hold down the mouse button, and the pencil writes in the background color until you release the mouse.

☐ 7. If the image includes large areas of unwanted information, use the Selection Marquee and delete all pixels contained within the marquee with the foreground color.

Note: Using Option + Delete fills the area with the background color.

☐ 8. After all errant pixels are corrected, make a tight marquee selection around the image using the Crop tool. Make any adjustments to your selection size/area and simply double-click on the image to crop out all unnecessary image areas.

☐ 9. Save the file as "lineart2" in the TIFF format.

Note: If you want the white areas of the image to be transparent, then save the image in the EPS format and select "Transparent Whites" in the Save As dialog box. This allows you to layer the art over a background, to lay the art on top of other images, or to create a color fill in an illustration program.

☐ 10. Print document and write your name and "Job Sheet 3" on top of the printed page.

☐ 11. Close file, exit image-editing software, and turn off computer and printer.

☐ 12. Submit job to the instructor for evaluation.

Evaluator's Comments: ____________________

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Objective 21

Job Sheet 4—Use Image-Editing Software to Touch Up and Prepare Continuous Tone Scan for Print

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Tonal adjustments/corrections made properly	______
• Printed continuous tone image is clean	______

Basic Skills

Reading Technology

Introduction

Scanned continuous tone images often require tonal adjustments using various filters and tools in image-editing software. This job sheet will take the student through the steps involved in this process.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- Printer
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open Photoshop or other image-editing software

☐ 3. Open the file "grayscale.tif" created in Job Sheet 2.

☐ 4. Create greater contrast by making a tonal adjustment using the Unsharp Mask filter in Photoshop.

Note: Refer to your image-editing software manual for instructions on using the Unsharp Mask filter and experiment with different settings.

☐ 5. Using the Histogram in the Levels dialog box in Photoshop, make tonal corrections.

Note: Refer to the image-editing software manual for more information on making tonal corrections using Levels.

☐ 6. Save the file as "grayscale2" in the TIFF format.

☐ 7. Print document and write your name and "Job Sheet 4" on top of the printed page.

☐ 8. Close file, exit image-editing software, and turn off computer and printer.

☐ 9. Submit job to the instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 22

Job Sheet 5—Calibrate and Assess a Desktop Scanner

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Established proper scanner adjustment settings to correct balances	______
• Used image-editing software correctly to exaggerate tonal differences	______

Basic Skills

Reading Technology

Introduction

It is a good idea to calibrate and assess your desktop scanner regularly to ensure that it is producing the most effective scanned results possible. This job sheet will take the student through the steps involved in this process.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- Printer
- Scanner
- Scan target, gray ramp, or imagesetter test sheets
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open scanning software or access scanner through Photoshop.

☐ 3. Scan a test strip and inspect the values all along the ramp by setting the info box (*Window > Palettes > Show Info*) to RGB.

Note: Grays are made up of equal amounts of red, green, and blue.

☐ 4. Using the test strip scan, evaluate the amounts of red, green, and blue all along your curve. Check for RGB values that are greater than others, because this will create a color cast in the highlighted areas.

☐ 5. Record your findings and establish adjustment settings to correct the balances.

☐ 6. Scan a large sheet of uniformly colored paper in RGB with all of your software settings at their defaults.

☐ 7. Open the image in Photoshop and exaggerate tonal differences by using Equalize (*Image> Map > Equalize).*

Note: The dark, splotchy areas tell you the "bad spots" or areas on your scanner where you should avoid placing originals when scanning. The clean, consistent areas are where your scanner is processing information correctly. The edges of the scanner bed tend to be the worst.

☐ 8. Print document and write your name and "Job Sheet 5" on top of the printed page.

☐ 9. Close file, exit image-editing software, and turn off computer and printer.

☐ 10. Submit job to the instructor for evaluation.

Evaluator's Comments:

Objective 23

Job Sheet 6—Scan a Continuous Tone Color Original

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Scanned image properly	______
• Scanner levels corrected as appropriate	______
• Image converted to CMYK	______

Basic Skills

Reading Technology

Introduction

This job sheet will familiarize the student with how to operate a computer, scanner, and scanning software to scan a continuous tone color original for CMYK printing.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- Printer
- Scanner
- Continuous tone color image (provided by instructor)
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

☐ 1. Turn on scanner.

☐ 2. Start the computer.

☐ 3. Open scanning software.

☐ 4. Prepare scanner for optimal image scanning.

Note: Be sure to check for fingerprints, dust, etc.

☐ 5. Obtain continuous tone color photograph from your instructor.

☐ 6. Place continuous tone color photograph on the scanner glass for scanning, making sure the image is straight.

☐ 7. Select the "Color (RGB)" color mode and a resolution of 300 ppi.

Note: This image will be printed at 150 lpi.

☐ 8. Select "Preview," if available, and adjust selection area to include only the image. Cut out as much white paper around the image as possible to decrease file size.

☐ 9. Make any scanner level corrections necessary adjusting the tonal, sharpness, or brightness settings and resample (preview) until you achieve the best image.

☐ 10. Acquire your scan.

☐ 11. Convert image to CMYK by selecting *Image>Mode>CMYK* from the Photoshop menu.

Note: If you are using an image-editing software other than Photoshop, this step may need to be modified for your software.

☐ 12. Save the scan as "colorimage" in the TIFF image format.

☐ 13. Print document and write your name and "Job Sheet 6" on the top of the printed page.

Note: You will need a color printer to view the image in color.

☐ 14. Close file, exit software, and turn off computer and printer.

☐ 15. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 24

Job Sheet 7—Convert a Continuous Tone Color Scan to Grayscale

Name ____________________ Attempt Number ________

Date ____________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Necessary color corrections performed	______
• Image converted to grayscale correctly using Technique 1	______
• Image converted to grayscale correctly using Technique 2	______

Basic Skills

Reading Technology

Introduction

This job sheet will give the student experience in two different techniques of scanning a continuous tone color image and converting it to grayscale.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software loaded on computer
- User's manual for image-editing software
- Printer
- File (colorimage.tif) created in Job Sheet 6
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

Technique 1

☐ 1. Start the computer.

☐ 2. Open Photoshop or other image-editing software.

☐ 3. Open the file "colorimage.tif" saved in Job Sheet 6.

☐ 4. Use the tools in Photoshop or other image-editing software to perform any needed color correction.

☐ 5. Convert to grayscale by choosing *Image > Mode > Grayscale.*

☐ 6. Click "OK" to discard color information.

☐ 7. Save this file as "colortogray" in the TIFF format.

☐ 8. Print document and write your name and "Job Sheet 7—Job 1" on the top of the page.

Technique 2

Note: This technique provides more detail.

☐ 9. Open the file "colorimage.tif" saved in Job Sheet 5.

☐ 10. Use the tools in Photoshop or other image-editing software to perform any needed color correction.

☐ 11. Convert the file to Lab Color by choosing *Image > Mode > Lab Color.*

☐ 12. Select the "a" or "b" channel and choose "Delete Channel" from the channel's pop-up menu.

☐ 13. Convert the file to grayscale by choosing *Image > Mode > Grayscale.*

☐ 14. Save this file as "colortogray2" in the TIFF format.

☐ 15. Print document and write your name and "Job Sheet 7—Job 2" on the top of the printed page.

☐ 16. Close file, exit software, and turn off computer and printer.

☐ 17. Submit jobs to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 25

Job Sheet 8—Perform Basic Color Correction

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Used image-editing tools properly	______
• Performed necessary color correction	______

Basic Skills

Reading Technology

Introduction

Scanned color images often require basic color correction using various image-editing software tools. This job sheet will take the student through the steps involved in this process.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- Printer
- File (colorimage.tif) created in Job Sheet 6
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open Photoshop or other image-editing software.

☐ 3. Open the file "colorimage.tif" created in Job Sheet 6.

☐ 4. Convert the image from RGB color mode to CMYK color mode.

☐ 5. Use the tools in Photoshop to perform any needed color correction.

Note: Refer to the user's manual for specifics on how to use the various tools (Curves, Info Palette, Rubber Stamp, Levels, Histogram, Hue/Saturation, Replace Color, and Selective Color) available in Photoshop to perform color correction.

☐ 6. Save this file as "colorcorrect" in the TIFF format.

☐ 7. Print document and write your name and "Job Sheet 8" on the top of the printed page.

☐ 8. Close file, exit software, and turn off computer and printer.

☐ 9. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 26

Job Sheet 9—Use Image-Editing Software to Perform Basic Image Cloning

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Image-editing tools used properly	______
• Items cloned correctly	______

Basic Skills

Reading Technology

Introduction

This job sheet introduces the student to the procedures involved in cloning a graphic in image-editing software to remove unwanted objects or to add images or information to a graphic.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- Printer
- Pencil or pen
- File (colorimage.tif) created in Job Sheet 6

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open Photoshop or other image-editing software.

☐ 3. Open the file "colorimage.tif" created in Job Sheet 6.

☐ 4. In Photoshop, choose *File > Preferences > Display & Cursors*. For Painting Cursors, click "Brush Size."

☐ 5. Select the Rubber Stamp tool in the toolbox.

Note: The Rubber Stamp tool has many uses including removing unwanted objects by "cloning" an area of the image over the area you want eliminated and adding additional images or information by "cloning" that information onto an additional area of the photograph. The beauty of the Rubber Stamp is that when you are finished no one will suspect the image has been changed!

☐ 6. Click the Brushes palette tab and select a small brush from the second row. The brush size you select will be used to paint or "clone" your changes.

☐ 7. To select the area you want to clone, hold down the Option key and click on the color, image, or texture you want to duplicate.

☐ 8. Release the Option key and position the Rubber Stamp tool over the area you want to paint. Click and drag using the mouse to paint over the area desired.

Note: For best results, use short strokes when replacing areas of an image with the Rubber Stamp. To vary the cloning area a bit, resample aligned areas often to make the completed image look more realistic.

☐ 9. Use the Rubber Stamp tool to clone an item or portion of an item on the same photograph.

☐ 10. Save your work as "imageclone" in the TIFF format.

☐ 11. Print document and write your name and "Job Sheet 9" on the top of the printed page.

☐ 12. Close file, exit software, and turn off computer and printer.

☐ 13. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 27

Job Sheet 10—Calibrate a Color Monitor

Name ____________________ Attempt Number ________

Date ____________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Monitor calibrated correctly	______

Basic Skills

Reading Technology

Introduction

It is important to calibrate your color monitor to stabilize the display of the colors on the monitor and to ensure a close match between the on-screen colors and printed colors.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation with color monitor
- Adobe Photoshop or other image-editing software
- User's manual for image-editing software
- White paper
- Pencil or pen

Procedure

Note: This job sheet was written for computers running Mac OS 8. If a different version of Mac OS is on your computer, ask your instructor for assistance. The steps in this procedure should also be modified to comply with the commands and prompts of the image-editing software and equipment used on-site.

Procedure

☐ 1. Start the computer.

☐ 2. Open Photoshop or other image-editing software.

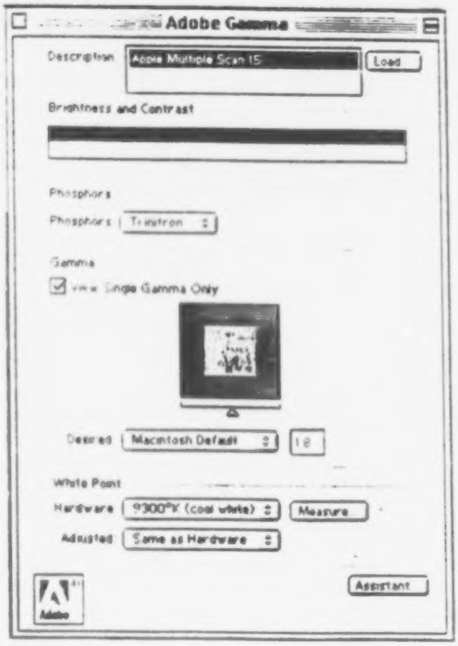
☐ 3. Make sure your monitor has been turned on for at least half an hour so the monitor display has stabilized.

☐ 4. Set the room lighting at a level you plan to maintain; then adjust the brightness and contrast controls on your monitor.

☐ 5. Turn off any desktop patterns, and change the background color on your monitor to a light gray to prevent the background color from interfering with your color perception. This also makes it easier to adjust the display to a neutral gray.

☐ 6. Choose Control Panels from the Apple Menu, then select the Gamma Control Panel from the list.

Figure 1



Description: Apple Multiple Scan 15

Phosphors: Trinitron

☑ View Single Gamma Only

Desired: Macintosh Default 1.8

Hardware: 9300°K (cool white)

Adjusted: Same as Hardware

☐ 7. Return to Photoshop, choose *File > New*, accept the default settings and click OK to create a new blank image.

☐ 8. Hold up a piece of white paper next to the white background of the blank image window on your screen.

Note: Use a piece of paper that is similar to the stock on which you'll be printing the image created in Photoshop.

☐ 9. Click "White Pt." and drag the three slider triangles until the monitor white matches the paper as closely as possible.

Note: This process compensates for the bluish cast found on most monitor displays. For the most accurate results, view the paper under controlled lighting, such as a light box or a combination of fluorescent and tungsten light bulbs.

☐ 10. Adjust the gamma by dragging the Gamma Adjustment slider until the solid gray areas match the patterned gray areas in the gamma strip above the slider.

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☐ 11. Adjust the color balance by clicking "Balance" and dragging the three slider triangles until the gray areas in the strip below the sliders become a neutral gray.

Note: This adjustment controls the monitor's mixture of red, green and blue, and it compensates for color casts in the monitor.

☐ 12. Adjust the black point by clicking "Black Pt." and dragging the three slider triangles until no color tint appears in the shadow tones in the lower strip, and you can see a distinct graduation between each pair of swatches.

☐ 13. Save the gamma settings for the paper stock you are using by clicking the "Save Settings" button and naming the settings file.

Note: To reuse the gamma settings you have saved, use the "Load Settings" button in the Gamma Control Panel when needed.

☐ 14. When you are finished making adjustments, close the Gamma Control Panel and the blank file you created in Photoshop.

☐ 15. Quit Photoshop and turn off computer.

Evaluator's Comments: ______________________________

____

____

Objective 28

Job Sheet 11—Place Scanned Graphics/Photos in Page-Layout Document

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Scanned graphics/photos placed correctly	______

Basic Skills

Reading Technology

Introduction

This job sheet provides students with experience in placing scanned graphics and photos in a page-layout document.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Adobe PageMaker or QuarkXPress
- User's manual for page-layout software
- File created in Job Sheet 1 (lineart.tif)
- File created in Job Sheet 2 (grayscale.tif)
- File created in Job Sheet 6 (colorimage.tif)
- Printer
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open PageMaker or QuarkXPress.

☐ 3. Create a new blank document using the page-layout program defaults.

☐ 4. In PageMaker, choose *File > Place*. In QuarkXPress, draw three picture boxes and choose *File > Get Picture.*

☐ 5. Locate and import each of the image documents you scanned and saved (lineart.tif, grayscale.tif, and colorimage.tif).

☐ 6. Save the document as "importimages."

☐ 7. Print document and write your name and "Job Sheet 11" on the top of the printed page.

☐ 8. Close file, exit software, and turn off computer and printer.

☐ 9. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 29

Job Sheet 12—Scan Text Using OCR Software

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Text scanned correctly	______
• OCR software operated properly	______
• Text revised as necessary	______

Basic Skills

Reading Technology

Introduction

OCR software is a time-saving tool that allows EPP operators to scan text when it would otherwise have to be input, edited, and revised.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- OCR software
- User's manual for OCR software
- Word-processing software or page-layout software
- Flatbed scanner
- One-page text document (provided by instructor)

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Turn on flatbed scanner.

☐ 3. Open OCR software.

☐ 4. Place the text document on the scanner bed.

☐ 5. Scan text document in OCR software.

Note: Once text has been scanned, a window should open on the computer screen containing the scanned image.

☐ 6. Perform OCR.

Note: After OCR has been performed, a text document window will open containing the text document.

☐ 7. Save the document using the appropriate format for the software you wish to open the document in.

☐ 8. Open word-processing or page-layout software.

☐ 9. Open scanned document.

☐ 10. Make revisions as necessary.

Note: OCR software occasionally replaces certain punctuation marks with other symbols. Watch for these substitutions and correct as necessary.

☐ 11. Resave document containing revisions.

☐ 12. Print document and write your name and "Job Sheet 12" on the top of the printed page.

☐ 13. Close all software applications, and turn off scanner and computer.

☐ 14. Submit printed document to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

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Objective Sheet

Unit Objective

After completing this unit, the student should be able to produce various kinds of EPP documents and prepare files to be sent to the print shop. The student will demonstrate these competencies by completing the assignment sheets and job sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms associated with layout and document preparation with their definitions.
2. Describe typical steps in an EPP layout process.
3. List methods of editing text.
4. Select from a list methods of editing graphics.
5. Select true statements concerning stacking text and graphics.
6. Match document-size commands with their effect on printer production.
7. Match standard proofreaders' marks with their definitions.
8. Arrange in order the steps in proofreading documents.
9. Match elements of a newsletter with their purposes.
10. Match elements of a multi-page document with their purposes.
11. Distinguish among types of proofs.
12. Distinguish between work-and-turn and work-and-tumble.
13. Match terms associated with imposition with their definitions.
14. Match terms associated with color trapping with their definitions.
15. Complete statements concerning trapping.
16. Select true statements concerning preflight check and its role in successful job completion.
17. List items that should be collected for output and sent to service bureau/print shop with print job.
18. Select true statements concerning the benefits of PDF files.
19. Select true statements concerning types of file compression.

Objective Sheet

20. Match methods of transferring files with their descriptions.
21. Select true statements concerning PostScript error descriptions.
22. Match common PostScript errors with their solutions.
23. Select true statements concerning backup utilities.
24. Select true statements concerning Macintosh-to-Windows and Windows-to-Macintosh file conversion.
25. Complete statements concerning imagesetter and film processor quality control checks.
26. Proofread a document. (Assignment Sheet 1)
27. Determine specifications for a newsletter. (Assignment Sheet 2)
28. Determine specifications for a multi-page document. (Assignment Sheet 3)
29. Stack graphics and text. (Job Sheet 1)
30. Produce a newsletter. (Job Sheet 2)
31. Produce a multi-page document. (Job Sheet 3)
32. Create single color layout using work-and-turn and work-and-tumble. (Job Sheet 4)
33. Create a document using imposition. (Job Sheet 5)
34. Create a vector drawing with trapping. (Job Sheet 6)
35. Preflight a document. (Job Sheet 7)
36. Collect document for output at service bureau. (Job Sheet 8)
37. Produce customer-specified document. (Job Sheet 9)
38. Package a file using PDF. (Job Sheet 10)
39. Use a file compression utility for file transfer or storage. (Job Sheet 11)
40. Transfer file using telecommunications. (Job Sheet 12)
41. Use a backup utility to create tapes/disks. (Job Sheet 13)
42. Use a backup utility to restore files to hard drive. (Job Sheet 14)
43. Burn a CD. (Job Sheet 15)
44. Perform quality control checks on film processor and imagesetter. (Job Sheet 16)

Information Sheet

Objective 1

Terms and definitions

a. **Abstract**—Brief summary of document contents

b. **Advance story**—Article presenting information on an upcoming event

Examples: Upcoming meeting, local/regional conference, election of officers, training seminar

c. **Backup utility**—Software that can create an automatic backup of everything on every computer on a network

d. **Delete**—To take out

e. **Densitometer**—Device used to measure the density of light transmitted or reflected by paper or film

f. **Feature story**—Article presenting information on a special event, activity, or other topic of interest

g. **File conversion**—Translating files from one software application format to another, usually between computer platforms

h. **Follow-up story**—Article presenting new information on a story published earlier

Examples: Election results, changes in by-laws, results of fund-raising projects

i. **Oversized document**—Document with pages larger than paper size available for printer

j. **Proofreading**—Reading a document to check for errors in type and graphics

k. **Specialty columns**—Regularly presented brief articles about particular topics

Examples: How-to columns, letters to the editor, president's column, calendar of events, book reviews, employee-benefits update

l. **Stacking**—Overlapping text blocks and graphics

m. **Troubleshooting**—Identifying the source of computer/software operating errors and eliminating their cause

Information Sheet

Objective 2

Typical steps in an EPP layout process

Note: The layout process takes place after the document has been designed, the text has been entered in word-processing software, and the graphics have been chosen, scanned, or created.

a. Set page orientation
b. Set margins and columns
c. Place text
d. Apply fonts and font typestyles
e. Place graphics
f. Edit text
g. Edit graphics
h. Adjust white space
i. Print rough draft
j. Proofread rough draft
k. Revise text and graphics
l. Print final draft
m. Proofread final copy
n. Preflight document
o. Collect items for output
p. Send document to print shop

Objective 3

Methods of editing text

a. Use text tool to insert, delete, move, or modify text blocks
b. Change column width
c. Adjust amount of text in columns
d. Flow text from column to column or page to page
e. Wrap text around graphics
f. Change leading, letter spacing, and word spacing
g. Change type size
h. Align text (flush left, flush right, center, or justify)

Objective 4

Methods of editing graphics

a. Crop graphic images

b. Scale or resize graphic images

c. Change density of shading

d. Change line thickness

e. Stack graphics and text

Objective 5

Statements concerning stacking text and graphics

a. Text blocks and graphics are individual layers in publication window.

b. Individual layers may be stacked.

c. Text blocks may be solid, transparent, or opaque layers.

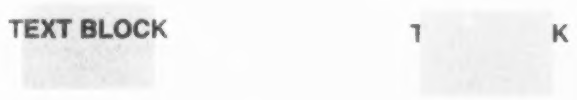
d. Graphics may be solid, transparent, or shaded layers.

e. Changing a layer's stacking order may affect its appearance.

f. Generally, the most recently selected item is the top layer.

Note: Menu items such as *send to back* or *bring to front* change the stacking order.

Figure 1—Transparent text with solid graphic



Square "sent to the back"; text "brought to the front."

Square "brought to the front"; text "sent to the back."

Objective 6

Document-size commands and their effect on printer production

a. Original (100%)—Printer produces document at actual size

b. Reduce—Printer produces document at specified increments smaller than actual size

c. Enlarge—Printer produces document at specified increments larger than actual size

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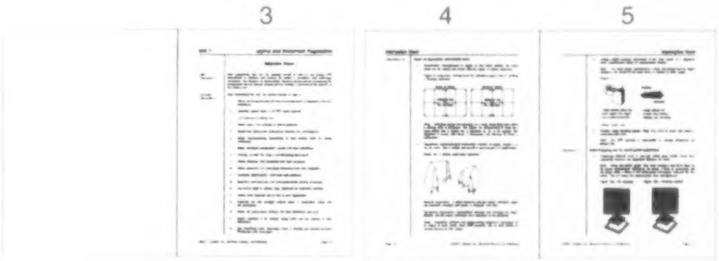
d. Thumbnail—Printer produces miniature copies of several document pages on a single sheet of paper

Note: Thumbnail printing is software specific and may or may not be available. If available, thumbnail printing is helpful for reviewing the design and layout of multi-page documents.

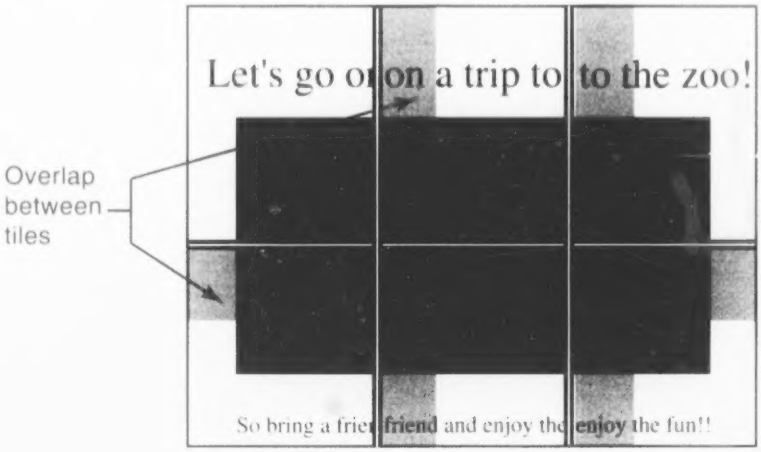
Figure 2—Thumbnail printing



e. Tile—Printer produces small units of one oversized-document page on several separate sheets of paper that then must be physically pasted together to create entire page

Note: The printing process described above is commonly called *tiling.*

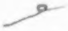
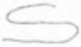
Figure 3—Tiling


Let's go o on a trip to to the zoo!
Overlap between tiles
So bring a frie friend and enjoy th enjoy the fun!!

Objective 7

Standard proofreaders' marks and their definitions

Table 1—Standard proofreaders' marks

Proofreader's mark	Definition	Example
	Delete	take out ~~out~~
	Delete and close up	delete and close up
	Close up space	close up sp ace
#	Insert space	insert#space
∧	Insert word, letter, numeral, etc.	insert le$\overset{t}{\wedge}$ter
[	Move left	[move left
]	Move right	move right]
¶	Make new paragraph	¶ make new paragraph
no ¶	Do not make a new paragraph	no ¶ Do not make a new paragraph
	Transpose letters, words, etc.	transpoes the letters
	Transpose lines	Transpose line 2. Transpose line 1.
≡	Change to upper-case letter	change to upper-case letter
lc /	Change to lower-case letter	change to Lower-case letter
	Insert apostrophe or comma	insert apostrophe
	Insert quotes	insert quotes
⊙	Insert period	insert period⊙
stet • • • •	Do not make correction indicated; leave as originally typed	stet do not make correction
sp	Spell out	2 sp
	Do not type; instructions to typist	NOTE: Instructions to typist are placed in the margin and then circled to indicate to typist that these are instructions only—not words to be inserted or typed.

Information Sheet

Objective 8

Steps in proofreading documents

a. Scan headlines and subheads for typographical errors.

b. Read text blocks for content to assure text has not been omitted.

Note: Inexperienced EPP operators can delete text accidentally without being aware of it. Rearranging text, shortening text blocks, or unstringing text blocks provide ample opportunities for losing text.

c. Proofread text blocks for typographical, hyphenation, and justification errors.

d. Proofread graphics.

Note: The proofreader should ask him- or herself the following questions when looking for errors in graphics:

- Do corners of boxes meet?
- Does text align horizontally?
- Are borders used consistently?
- Are column rules the same thickness throughout?
- Are photo or graphic captions aligned properly?
- Is page-number placement consistent?
- Is density of shading in screens too heavy, too light, or acceptable?
- Are typefaces used consistently?

e. Have document proofread by another person.

Note: More than one person should proofread a document before it is sent to the print shop.

Objective 9

Elements of a newsletter and their purposes

Note: See Student Supplement 2.

a. **Address panel**—Reserved for mailing label

b. **Alley**—Provides white space between two columns

Note: An alley is called a *gutter* in most page-layout programs.

c. **Articles**—Present feature, follow-up, and advance stories and specialty columns

d. **Byline**—Identifies author; usually placed at the beginning of an article if it is short or at the end of an article if it contains a brief biography

e. **Caption**—Describes a photo, illustration, or chart

f. **Deck**—Explains the content of a story; appears immediately below the headline as an external subhead

g. **Filler**—Presents story, cartoon, or clip art used to fill an area short on copy

h. **Folio**—Provides space for the page number

i. **Footers**—Provide information such as newsletter title and page number on the bottom of every inside page

j. **Graphics** (graphic art)—Provide additional detail, add emphasis, or further explain information contained in articles

   Note: Artwork and photos used as graphics should be selected very carefully. Their purpose is **not** to just fill space but to serve a specific purpose.

k. **Gutter**—Provides blank space between inner edge of two pages where fold or binding exists

l. **Header**—Presents copy that recurs at the top of every inside page such as the title, subtitle, issue, date and the page number

m. **Headlines**—Provide short statements to identify the contents of articles

n. **Indicia**—Provides a postal permit imprint used in place of a postage stamp

o. **Jumpline**—Indicates that an article continues on another page

p. **Kicker**—Appears as a secondary headline on the line above the main headline

q. **Logo**—Provides graphic image that represents an organization, company, or item

r. **Mailing area**—Contains the mailing label, return address, indicia, address correction request, and possibly teasers to lure readers inside; located on the back cover of self-mailing newsletters

   Note: Make sure the mailing area meets postal requirements and no elements interfere with postal service equipment.

s. **Masthead**—Lists publisher, publisher's address, editorial staff, subscription rate, copyright notice, and ISSN (if applicable)

   Note: The masthead is usually located either on the bottom of page two or on the last page of the issue. Whichever location is selected, the masthead should appear in the same location from issue to issue.

t. **Nameplate**—Identifies publication name with accompanying graphics such as a company logo, subtitle or motto, publisher, date, and volume number

Note: The nameplate appears on the first page of the publication and in the same location from issue to issue.

u. **Pull quote**—Catches the reader's attention using a quotation pulled from within the story

Note: A pull quote may also be referred to as a *callout* or *blurb*.

v. **Sidebar**—Supplements a longer article with related information

w. **Subhead**—Breaks up long articles and allows reader to skim article content

x. **Table of contents**—Lists page numbers of the articles to encourage readers to explore the publication contents

Objective 10

Elements of a multi-page document and their purposes

a. **Cover**—Identifies document and protects contents

Note: A cover may also include a logo.

b. **Title page**—Gives complete title and subtitle, identifies author, and may present other information, such as list of contributors, date of publication, document abstract, reproduction restrictions, and distribution categories

Note: A title page may also include a logo.

c. **Table of contents**—Identifies page numbers of major text sections

Note: The table of contents can serve as a valuable tool to the reader by presenting a visual outline of the text's organization.

d. **List of illustrations**—Provides listing of tables and/or figures contained in text

Note: Tables are data arranged in vertical columns and horizontal rows. Figures may include graphics, charts, diagrams, photos, and maps.

e. **List of symbols**—Identifies acronyms and symbols used in text

Note: The list of symbols and acronyms is usually accompanied by written descriptions or definitions that explain the items included in the listing.

f. **Introduction**—Provides overview of document contents

g. **Text**—Presents main body of printed information

h. **Graphics** (graphic art)—Provide additional detail, add emphasis, or further explain information in text

i. **Summary**—Reviews points made in text and may express conclusions

j. **Index**—Provides alphabetical listing of topics presented within text and gives page number where each topic appears

k. **Glossary**—Lists and defines important terms presented within text

l. **References**—Lists sources of information and/or provides bibliographic documentation of materials used in writing text

Objective 11

Types of proofs

Note: Before the proof is sent to the customer it is first proofread in the shop. This is the time to make changes, if needed; if made later, they will be more costly.

a. Visual editing—Operator reads copy on computer screen, checking for errors, changes, or omissions, and by use of a cursor, locates and corrects the copy.

b. Laser proofs—EPP operators use laser prints on plain bond and mark corrections on these.

c. Revised proofs—New mistakes can slip in when old ones are corrected—revised proofs provide protection for printers and customers by permitting detection of errors made during corrections before material has been put in page form.

d. Bluelines or brownline proof—Prepress, photographic replica in blue or brown of all pages in a printed job that is used if there are overlays, halftones, reverses, tints, or anything that will not show on a photocopy.

- Check to see that everything was stripped correctly.
- Proof illustrations.
  - — Check dimensions; negatives must fit their space.
  - — Look for imperfections like photos with jagged edges, unsightly scratches, blemishes, and spots.
  - — Examine content; make sure photo is cropped and scaled properly and faces in proper direction.
  - — Check if halftone exposure is too gray or has too much contrast.
  - — Watch for paper clip marks on edge, faint handwriting on surfaces, or cracks from folded photos.
- Stick pages together back-to-back for two-sided jobs, fold, trim, staple, and check page sequence.

  Note: Don't leave anything to chance.

- When proofing simple two-color jobs, color differences can be indicated by varying exposure time.
- Write instructions directly on proof.

e. Color proof—Intended primarily for color separations

Note: Overlay methods such as Imation's Color-Key, laminated overlays like DuPont's Cromalin, and progressive proofs (progs), are examples of traditional color proofing systems.

- Color proofing materials are expensive.
- Costly separations may be avoided by use of electronic soft copy previewing; computers and scanners allow the operator to manipulate the color image.

f. Press proof—Proof made on press using the plates, paper, and ink specified for the job

- Costly in both time and money
- Used primarily for premium four-color printing jobs

g. Digital proof—Proof made by outputting electronic files on a high-resolution, high-quality printer

Note: As more of the industry moves to computer-to-plate workflow, digital proofing has become extremely important. For digital proofs to replace film-generated proofs, they must accurately represent all the features of the traditional proof including color fidelity, traps, and overprints, representative screening, and quality in fine line details.

- Dye-sublimation printers and ink-jet printers
    - Simulate both process inks and spot colors
    - Produce dotless color images that closely simulate the press sheet
    - Much less expensive to produce than conventional proofs
- Electrostatic printers and high-quality printers/copiers
    - Simulate the printing inks of a press
    - Commonly used for proof production
- Digital bluelines
    - Two-sided digital position proofs for eight-page impositions usually printed on wide format ink jet proofers
    - Allow proofs to output in full color or in single color to check basic layout and imposition
    - Can produce two-sided signature proofs

Objective 12

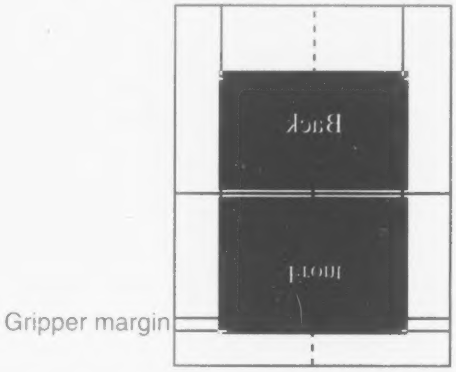
Work-and-tumble and work-and-turn

Note: Work-and-tumble and work-and-turn are both forms of sheetfed printing in which front and back images share a single plate.

a. Work-and-tumble

- The sheet is printed on one side, flipped head over heels, and printed on the other side.
- After flipping, the paper has a new leading edge, requiring two gripper edge allowances.

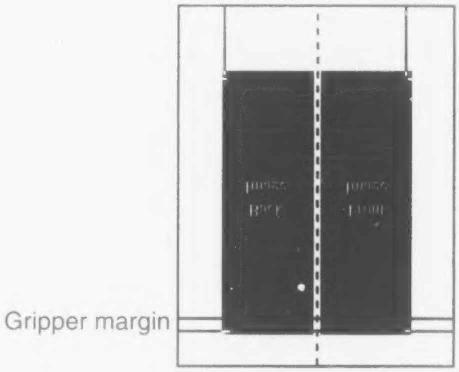
Figure 4



b. Work-and-turn

- The sheet is printed on one side and then turned right over left so that the back can be printed.
- The leading edge is not changed thus only one gripper margin is required.

Figure 5

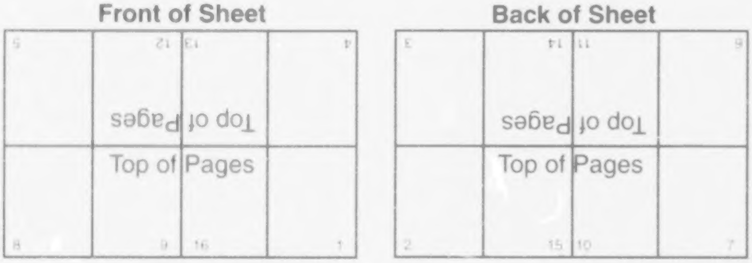


Objective 13

Imposition and related terms

a. **Imposition**—Arrangement of pages so that when printed, the press sheet can be folded and bound with the pages in proper sequence

Figure 6—Imposition arrangement for individual pages prior to printing a 16-page signature



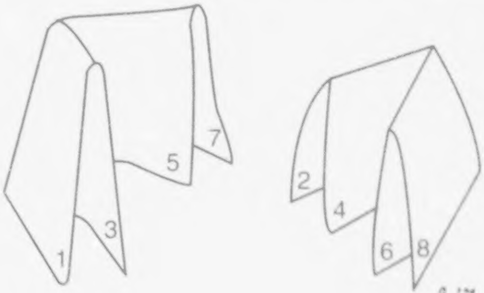
Note: Individual pages are arranged on a large sheet (flat) from which a printing plate is produced. Two plates are printed front to back on a press sheet that is folded into a signature (8, 16, or 32 pages). The signature is bound with others, if necessary, and trimmed to create a publication.

- **Manual imposition**—A labor-intensive process where individual pages are precisely arranged and taped (or stripped) onto flats
- **Electronic imposition**—Specialized software that arranges the pages digitally into the proper formation for a signature to be produced

  Note: Imposition software and imagesetting equipment necessary for its output are quite costly. Most EPP operators rely on their print shop or service bureau for this output.

b. **Signature**—A printed sheet containing a number of pages, usually 4, 8, 16, 32, or 64, that is folded and bound to become part of a publication

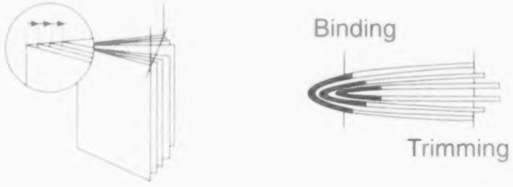
Figure 7—A folded, eight-page signature



c. **Creep**—Slight outward movement of the inner pages of a signature when collated and folded for saddle-stitch binding

Note: The more pages contained in a book, the farther out the pages closest to the center of the book move in relation to other pages.

Figure 8



Creep occurs when the inner pages of a signature project outwards.

Creep affects the printed area during binding and trimming.

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d. **Gripper edge** (leading edge)—Edge of a sheet of paper that enters a sheetfed press first

Note: The EPP operator is responsible for making allowances for gripper bite.

Objective 14

Color trapping and related terms

a. **Trapping**—Method used to prevent visible gaps (white lines) from appearing between two objects of different ink colors

Note: When two colors touch, they must overlap a tiny bit to allow for the paper stretching or shifting on the press. If there is no overlap and the paper shifts, a sliver of the white paper will appear between the two colors. This will make the printed piece look misregistered.

Figure 9a—No trapping

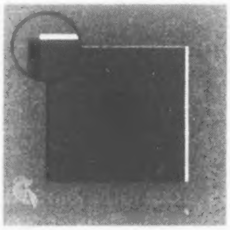
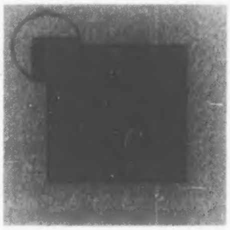


Figure 9b—Trapping applied



b. **Choke**—Background object is stroked to the inside so object laying on top of the knockout overlaps the background color to avoid misregistration or unsightly gaps between colors

c. **Spread**—Foreground object is stroked to spread into the underlying background color

d. **Knockout**—A hole created in the background separation allowing the top most color to print in the opening created

e. **Overprint**—When one ink color prints on top of another ink color

Objective 15

Statements concerning trapping

a. Trapping is most important with spot color jobs where different colors overlap each other.

b. Trapping is more important for products printed on a high-speed web press than products printed on a sheetfed press.

c. Many illustration, image-editing, and page-layout software packages provide built-in trapping features.

Note: Incorrect application traps can result in loss of time and money.

d. Commercial printers can often compensate for potential trapping problems by exposing film slightly longer when making plates. This process subtly increases the width of lines.

e. Service bureaus may prefer to create trapping using specialized software such as TrapWise rather than having the customer perform the trapping.

f. Overprint black information such as small text or thin lines. This compensates for misregistration because of the background inks.

g. Trapping commands increase the time a file takes to output.

Objective 16

Preflight check and its role in successful job completion

Note: See Unit 3, Objective 7 for the characteristics of quality preflight software.

a. A preflight check is a quality control process that aids in successful output by gathering information, reviewing the file, and outputting paper proofs.

b. Software such as Extensis Preflight Pro or Markzware Flight Check help automate the preflight process. These programs check electronic documents and alert the EPP operator to potential problems. The EPP operator reviews the potential problems and decides what needs to be fixed.

c. Preflight checklist

Note: See Student Supplement 3 for a detailed list of items to preflight check prior to sending a job to a print shop.

- Fonts
    - — Are all fonts used in document packaged with document?
    - — Were PostScript fonts used rather than TrueType?
    - — Are all screen and printer fonts included for the job?
    - — Were typestyles such as bold and italic applied using correct font rather than using attributes on style palette?
- Graphics
    - — Are all graphics files included with the job?
    - — Was nesting kept to a minimum?
    - — Are hairlines proper thickness?
    - — Were blends created correctly?
- Colors
    - — Were all unused colors deleted?
    - — Have all RGB colors been converted to CMYK?
    - — Do all spot or Pantone colors have the identical name defined?

Objective 17

Items to collect for output and send to service bureau/print shop with print job

Note: If the job will be packaged as a PDF and sent to the print shop, then the fonts and graphics will be embedded within the PDF file and do not need to be sent separately.

a. File that is to be output

b. Fonts used in document including printer and screen fonts

c. All graphics files used in document

d. Proof of what the job should look like when printed; if the job includes color then a color proof should be sent with the job

e. Electronic filesheet—Most print shops and service bureaus have an electronic filesheet for the customer to complete when submitting a job. This form includes such things as files names; software, software versions, and platform used; colors used; what type of output is desired, etc.

Note: See Student Supplement 4 for an example of an electronic filesheet.

Objective 18

Benefits of PDF files

a. PDF (Portable Document Format) files store publications in a format that can be viewed and printed on any computer or platform.

b. PDF files can be viewed and printed without requiring the fonts, artwork, and software used to create the publication.

c. A PDF archive can be opened, printed, and exchanged on any Macintosh, Windows, or UNIX computer.

d. Large libraries of PDF files can be indexed and searched, and text and images can be copied into other applications.

e. PDF files can be made directly with Adobe Acrobat software. Many programs can also export files as Adobe PDF.

Objective 19

Types of file compression

a. **File compression software**—Compression compacts data to make files smaller so that they take up less disk space

Examples: Macintosh file compression software—DiskDoubler, StuffIt, CompactPro; Windows file compression software—PKZip and LHA

Note: Compressed files must be uncompressed before they can be used. When compressing files, **never** compress the original file. All it takes is the loss of one bit to destroy a file. Always keep one uncompressed "backup" of every file.

b. **Lossy compression**—JPEG compression software that selects details that are important to the image and discards the rest

Note: Do not compress data that will be printed using JPEG compression. It is, however, an acceptable format to use when publishing on the Internet.

c. **Lossless compression**—Compression that replaces strings of repeating characters with a single character to make the file smaller and save disk space

Objective 20

Methods of transferring files

a. **LAN** (Local Area Network)—Computer network that allows files to be moved between computers within an organization or on the same network

Note: Due to the slow speed of most networks, you may prefer to move large files using Zips, SyQuest disks, SuperDisks or other removable media. Smaller files can be transferred efficiently using a LAN.

b. **Modem**—A hardware device that allows computers or other electronic devices to communicate over telephone lines

Note: Modem baud rates can vary greatly. The higher the baud rate, the faster the connection and transfer of the file. Modems can be built-in (internal) or connected (external) to a computer.

c. **E-mail attachment**—Files are attached to electronic mail and transferred through an Internet service provider

Note: There are limitations to the size of attachments that can be sent with e-mail within many businesses. Exceeding these limits can cause an entire network to crash. Internet service providers and software may also restrict file sizes that can be transferred using e-mail attachments.

d. **FTP** (File Transfer Protocol)— Allows users to download or upload files from a designated location through an Internet access provider

Note: FTP has several advantages over sending e-mail attachments. It does not interfere with e-mail services, file size is not limited, and FTP programs monitor the transfer and alert you to any problems encountered. One disadvantage of FTP is the file has to be downloaded to your computer to work with it.

e. **Bulletin board services**—Usually set up by an organization or club to provide or exchange information through a computer modem

Note: Bulletin board services allow the user to read messages, post messages, ask questions, answer questions, and communicate with coworkers and business clients.

Objective 21

PostScript error descriptions

Note: PostScript is a trademark of Adobe Systems Incorporated.

a. A PostScript error is a special code designed to address problems encountered while processing the original file through the RIP (raster image processor) for imagesetting.

b. The first line of a PostScript error message shows the name of the error and the PostScript command causing the error.

c. The second line of a PostScript error message may indicate that processing has failed and the RIP has stopped executing the file.

Example:

```
%%[Error:<error name>; OffendingCommand:<command name>]%%

%%[Flushing: rest of job (to end-of-file) will be ignored]%%
```

Note: If the message does not contain the words "Error" and "OffendingCommand," the message may indicate a problem with the printer engine or another part of the system.

Information Sheet

Objective 22 | **Common PostScript errors and troubleshooting procedures**

Error Name	Usual Meaning	Common Problems and Solutions
<fontname> not found, using Courier	The requested font was not supplied by the RIP or was not within the PostScript file. (no offending command)	Download the missing font to the RIP, include it in the document, or choose a different font.
configurationerror	A requested feature setting cannot be satisfied; often accompanied by an extra ErrorInfo field in the error message indicating the requested feature.	Do not request the feature from the printer driver, use a different printer support file, or configure the RIP to support the feature.
dictfull	There is no more room in PostScript data structures called dictionaries; this problem is more common with PostScript Level 1 than with Level 2.	These operators store objects in dictionaries; error requires advanced debugging.
invalidaccess	An attempt was made to put an object into a read-only data structure.	These operators store objects in various PostScript data structures; error requires advanced debugging.
invalidfont	There was an attempt to install a malformed or an improperly licensed font in the RIP's memory.	Replace or reinstall the font on the RIP and/or computer.
invalidrestore	There is a programming problem with memory management.	There is likely a problem with the printer driver; requires advanced debugging.
ioerror	An input/output error occurred while the RIP was processing a file; the file in question could be the actual job or another file referenced by the job file.	The amount of data supplied is incorrect; scan, edit, or import the image again. These characters may indicate a problem with the communications link; move or replace the communications line, check communications settings, disable spoolers, or run the job again.
limitcheck	An implementation or memory limit has been exceeded often because the file or file elements are too large or complex.	A graphic is too complex (occurs very rarely when using PostScript Level 2). Increase flatness, split paths, simplify the graphic, or lower the printer engine's resolution. The internal representation of the requested halftone screen is too large or too small; consult your RIP vendor. The image is too large, its resolution is too high, or it cannot be rotated. Reduce the size or resolution, rotate the image at a different angle, or rotate it in an image-editing application such as Adobe Photoshop.

Error Name	Usual Meaning	Common Problems and Solutions
rangecheck	A value provided to the operator was outside the acceptable range.	The requested paper tray does not exist; request a different tray from the printer driver.
stackoverflow	This is a programming problem concerning the filling up of an internal data structure called the operand stack.	May indicate a printer driver problem or interference from a separate utility; requires advanced debugging.
stackunderflow	The operator expected one or more values to be available on the operand stack, but there were none.	May indicate a printer driver problem or interference from a separate utility; requires advanced debugging.
timeout	A time limit for an operation has been exceeded.	A time-out threshold is set too low or there is a communication problem. Use administration software or the printer driver to reset the time-out value on the RIP, or try a different driver.
typecheck	The operator expected a certain type of value on the operand stack, but the wrong type was provided instead.	May be a printer driver problem or interference from a separate utility; requires advanced debugging. This could indicate a problem with the communications link or with the leftover data in the job; try a different communications line or printer driver. This problem may also occur if a PostScript file is saved, transferred to a different computer platform, and downloaded from that computer; try saving the file in ASCII or Text Only rather than binary format.
undefined	The name specified in the OffendingCommand is not known to the RIP.	This is not a PostScript operator; it indicates that the required PostScript code has not been included in a PostScript file saved on the Macintosh. Resave the file. The job contains a nonstandard operator that is not recognized by the RIP; check the driver settings or select a different printer support file. Too much data for an image may have been supplied; scan, edit, or import the image again.
VMerror	The RIP has run out of PostScript virtual memory (VM) during the job.	Reboot the RIP to clear its memory; this error should be very rare when using PostScript Level 2.

Objective 23

Backup utilities and their importance

Note: Dantz's Retrospect is the industry standard for automated backup utilities.

a. A regular and organized backup routine should be included in every company's computer operating procedures to ensure that documents will not be lost in the event of equipment failure.

b. Backup utilities save time and minimize storage space by backing up only new and changed files.

c. Backup utilities can restore backed up files to the hard drive.

Objective 24

Macintosh-to-Windows and Windows-to-Macintosh file conversion

Note: It is not advisable to convert files between platforms unless absolutely necessary. Many print shops have Windows and Macintosh versions of all popular page-layout software making file conversion unnecessary. If you find that you must convert a file from one platform to the other, then follow the guidelines below.

a. When transferring or translating file formats between Macintosh and Windows platforms, it is important to remember that the Windows platform requires an extension (i.e. ".txt" or ".eps") to recognize the document type.

b. It is a good practice to save all files with the required extension to facilitate transfer between platforms.

c. If a file is saved in its native format, it can typically be transferred, opened, and edited between computer platforms as long as the same software versions are utilized.

Note: In theory, converting between platforms when using the same software and same software version should work. However, it often does not work properly and creates additional work for the EPP operator.

d. Watch for font reflow and font substitution when converting files between platforms.

Objective 25

Imagesetter and film processor quality control checks

Note: Check for the following on film separations and output.

a. Exposure—Overexposure darkens halftones, thickens lines, and fattens type. Underexposed film causes halftones to plug and lines and type to be too thin.

b. Scratches—Scratches can be caused by dust, dirt, or rough edges on the film box, imagesetter film path, or takeup cassette. A dirty processor or worn rollers can also cause scratches as it develops.

c. Film density—Check film for opacity in areas that should appear black. A densitometer may be used to measure the imagesetter results. Developer may need to be refreshed or replaced in film processor to improve film opacity.

d. Font problems—Watch for fonts replaced with Courier, odd spacing between characters, and lines in a paragraph.

e. Missing or added elements—Check for missing or added elements on each film separation, comparing the film to color prints or laser separations.

f. Cloudy or foggy areas—This is probably a result of old chemistry. Try adjusting the processing speed.

g. Overprinting and knockouts—Look for elements that are reversed and those requiring tight registration.

h. Bleeds—Look to see that objects extend beyond the crop mark boundaries.

i. Trapping—Verify that overlapping colors appear correct.

j. Tints and halftones—Check for dot values, consistency, and smooth gradations.

Student Supplement 1—One-Page Newsletter

Directions

You will use the one-page newsletter on the following page in completing Assignment Sheet 2 and Job Sheet 2. In Assignment Sheet 2, you will determine the specifications necessary to duplicate this one-page newsletter, and in Job Sheet 2, you will produce the newsletter using the specifications you determined in the assignment sheet.

MAVCC Minutes

Volume 1 • Number 1 • May 2000 Stillwater, OK 74074

MAVCC celebrates 25 years as a leader in CBE

MAVCC began on February 1, 1975, with a staff of one full-time director, one part-time employee, and one publication. In the last 25 years, we have touched over one-and-a-half million people through the utilization of our materials, workshops, conferences, exhibits, and catalogs. This includes people in all 50 states and 17 foreign countries.

Twenty-five years ago vocational leaders from across the United States created MAVCC to share the cost in developing and disseminating mutually-needed, occupationally-specific, competency-based curriculum.

Since 1975, MAVCC has been developing competency-based instructional materials for use in the classroom of today and the learning environment of the future. MAVCC instructional materials have won eleven national awards of excellence for curriculum development in the past nine years.

MAVCC exists today because of the continued financial support of our ten member states: Oklahoma, Arkansas, Iowa, Texas, South Dakota, Georgia, Kansas, Louisiana, Missouri, and Tennessee. Each member state has a representative on the MAVCC Board of Directors, who works with the MAVCC staff to establish the policies for the organization. Each member state has a representative involved in the development of MAVCC instructional materials. States have involved more than 1,500 representatives from business, industry, labor, and education to assist in the development process.

MAVCC is preparing for the future with new technology such as computerized tests, publications on disk, and CD-ROM interactive publications to respond to our customers' needs in the 21st century.

Celebrating Twenty-Five
MAVCC
25
1975 - 2000
Years of Excellence

New graphic arts products

- *Orientation, Composition, and Paste-Up*
- *Process Camera, Stripping, and Platemaking*
- *The Press and Finishing Processes*
- *Electronic Prepress and Publishing*

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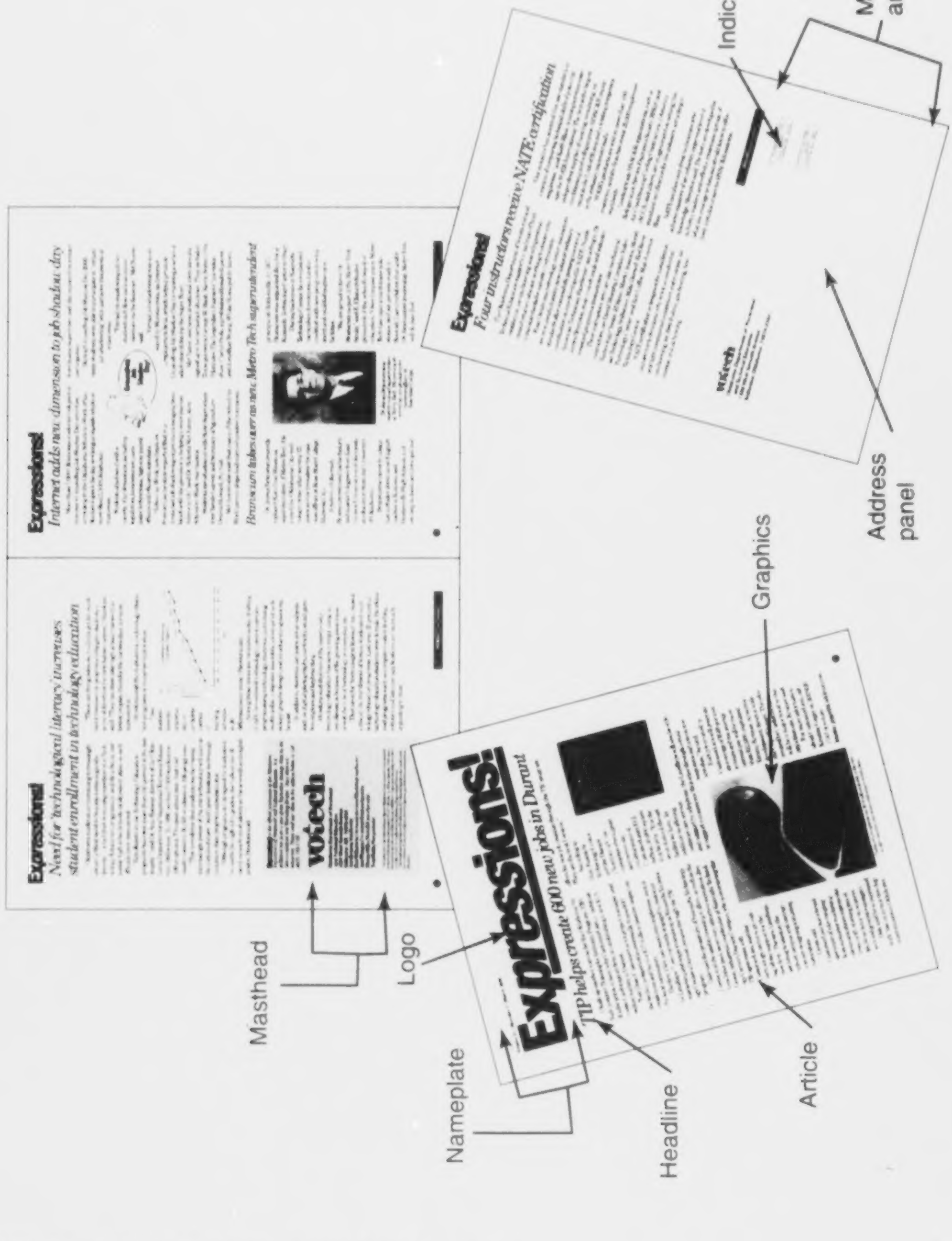
Student Supplement 2—Sample Multi-Page Newsletter


Masthead
Logo
Nameplate
Headline
Article
Graphics
Address panel
Indicia
Mailing area
Expressions!
Need for 'technological literacy' increases student enrollment in technology education
Internet adds new dimension to job shadow day
Branscum takes over as new Metro Tech superintendent
votech
Expressions!
TIP helps create 600 new jobs in Durant
Four instructors receive NATE certification

Courtesy of Oklahoma Department of Career and Technology Education.

BEST COPY AVAILABLE

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Student Supplement 3—EPP Preflight Checklist

EPP Preflight Checklist

Listed are potential problem areas. Review each area, and if any explanation is needed please call the print shop.

1. DOCUMENTATION

- ❍ If the file is sent via a modem, a printed proof must follow.
- ❍ Proofs are properly marked up identifying LIVE-V.S.-FPO images and color separations, as if a tissue overlay.

2. DIGITAL MEDIA

- ❍ Clearly labeled with company name, disk number, contact, project name, date, etc.
- ❍ File naming conventions agreed to and followed.
- ❍ Each file has a unique, useful name.
- ❍ Revised files have new file names.
- ❍ Contains copies of all layout files.
- ❍ Original graphics (TIFF, EPS, etc.) enclosed.
- ❍ Files have been copied in such a way that links will be maintained when the file is opened in a new environment.
- ❍ Compression programs used match the vendor's.

3. TEXT

- ❍ Styles properly applied.
- ❍ Reverses and outlines properly built.
- ❍ Use of tiny type or graphic elements avoided.
- ❍ Text within graphics: font(s) provided or paths converted to outlines.
- ❍ Text wrap properly implemented.
- ❍ Automatic page numbering used when possible.

4. GRAPHIC ELEMENTS

- ❍ Borders and rules properly built.
- ❍ No less than .5 line rule has been applied for hairlines.
- ❍ Minimal nesting.
- ❍ Flatness appropriately set.
- ❍ Knowledgeable use of scaling, cropping, and rotating (all completed before imported).
- ❍ Attention to blends: avoid shadestepping and other processing implications.
- ❍ Placed graphics contain single subjects.
- ❍ Nonprinting areas are not covered with a white box (white boxes are not used to cover anything).
- ❍ FPOs saved as a PICT format.
- ❍ Digital die lines used to build designs.
- ❍ UPC codes accurately built.
- ❍ LIVE images provided in the correct formats: EPS or TIFF.
- ❍ Picture windows properly built.
- ❍ Digital photo and photo CD file formats correctly chosen.
- ❍ Magnify to confirm placement of matching elements, particularly for crossmatching.
- ❍ Illustrations or scans have not been renamed once they have been imported into the document layout.
- ❍ EPS graphics from other applications should be placed into either Quark or PageMaker documents. These page-layout programs have sophisticated page and color control, and they can color separate any EPS graphic.

5. COLORS

- ❍ Colors are properly defined with attention to SEPARATIONS ON/OFF.
- ❍ Unused colors deleted.
- ❍ Special colors properly applied.
- ❍ Spot colors (5,6,7, etc.) are proofed on a separate proof and attached to the composite.
- ❍ Spot or Pantone colors have the identical name defined in the layout documents to prevent the color from being treated like a process color.

6. MISCELLANEOUS

- ❍ Document size does not exceed the limits of the imagesetter or press (Herkules 21.7″x 29.5″).

This means that the largest film that we can play out in one piece with a full bleed without tiling is 20x28. (We have to allow for bleed and trim marks.)

7. OTHER MATERIALS

- ❍ Transparencies of reflective copy required for the job.
- ❍ Clear instructions about what to do with scans.

Questions or comments:

This document is adapted from the SGAUA CREF guidelines.

Student Supplement 4—Electronic Filesheet

Electronic Filesheet

1 Dates

Date ____________

Due Date ____________

Help us provide the best possible service for you! Please take a few minutes to complete this form. Do not leave any space blank. Use N/A if item is "not applicable." This information can save production time and may reduce your costs.

2 General Information

Customer Name ____________ Contact Person ____________ Phone ____________

Job Title ____________ Job Description ____________

Page Size: ☐ 8.5 x 11 ☐ 11 x 17 ☐ Other ____________

☐ 100% Size Laser Proofs Enclosed (Required). Separate laser prints for each color are requested.

☐ Font License Agreement. **PLEASE CHECK YOUR FONT LICENSE. WE WILL NOT PRINT JOB UNLESS THIS BOX IS CHECKED.**

3 Electronic Environment

Platform: ☐ Mac ☐ Windows ☐ Other ____

Media type that electronic files are delivered on:

☐ 3.5" floppy ☐ Zip disk ☐ SyQuest 88 ☐ CD-R

☐ Network (internal customers only)

☐ Internet e-mail (Date/Time) __

4 Color

Number of inks: ☐ Black only ☐ Four-color process

☐ Pantone—please list color(s) ____________

Does ink bleed off an edge of any part of this document? If "yes" please describe by indicating page number(s) ____________

5 Film

Imagesetter output requirements:

☐ Film negative ☐ Other ____________

Screen ruling: ☐ 100 lpi ☐ 120 lpi ☐ 133 lpi ☐ 150 lpi ☐ Other ________

Have traps been applied: ☐ Yes ☐ No

CUSTOMER ASSUMES LIABILITY IF TRAPPING PREVIOUSLY APPLIED.

6 Software

Software used:

☐ PageMaker ________ ☐ Photoshop ________

☐ QuarkXPress ________ ☐ Illustrator ________

Please list any other software or extensions used:

____

____

7 Fonts

☐ AdobeType 1 ☐ Other ____________

☐ Printer & screen fonts supplied

Please list font families ____________

____

If more space is needed, please attach separate document.

OUR IMAGESETTER DOES NOT SUPPORT TRUE TYPE.

8 Preflight

Did you use a preflight software?

☐ Yes—Please attach preflight report.

☐ No—PLEASE READ AND COMPLETE EPP PREFLIGHT CHECKLIST.

Notes/Explanation

____

____

This document is adapted from the SGAUA CREF guidelines.

Objective 26

Assignment Sheet 1—Proofread a Document

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Proofreading was accomplished accurately with proper proofing marks	______

Basic Skills

Reading Writing

Directions

Proofread the document below, and use the proofreaders' marks you learned in Objective 7 to mark corrections required.

The multi-faceted face of electronic prepress offer many opportunities to indivduals who may wish to broader their skills in the business world. Electronic prepress skills are beneficail in jobs requiring simple black-and-white reproductions to elaborate, colorful multi-page magazines. An experienced electronic prepress EPP) operator can comfortably work with simple page-layout software and even perform basic precedures in more difficult software.Many of the procedures in EPP are similar, even though the terminology may differ from one software to another.

Although the business community has been slow to financially reward the efforts necessary to achieve EPP skills, EPP operators must continue to work toward financial recognition. EPP operators must make management personnel aware that electronic prepress involves more than clerical skills. Often an EPP operator perform the functions of designer, typist, editor, proofreader, and artist. Proficiency in these areas takes dedicated effort as well as knowlegde.

Objective 27

Assignment Sheet 2—Determine Specifications for a Newsletter

Name ______________________ Overall Rating __________

Date ______________________

Evaluation Criteria	Rating
• Directions were followed	______
• Student completed accurate specifications	______

Basic Skills

Reading Mathematics

Directions

Examine the one-page newsletter provided in Student Supplement 1. Use a line gauge and type gauge to determine how to duplicate the newsletter and then write those specifications on the form below. Check the specifications carefully (you will produce this project in Job Sheet 2) and then submit the specifications to your instructor for evaluation.

Note: The graphic art in the newsletter may be reproduced by using a scanner or by using graphics provided by your instructor.

Project specifications sheet

1. Page size ______________________________

2. Margins and type area

   Margin sizes: Top ____________ Bottom ____________

   Inside ____________ Outside ____________

   Size of type area ______________________________

3. Borders: None ________ Location ________ Size ________

4. Rules: Size ________

5. Column size: Number of columns ____________

   Equal or unequal sizes ____________

6. Typeface ____________

Type size: Heads________ Subheads ________ Body copy ______

Leading: Heads________ Subheads ________ Body copy ______

7. Type alignment: Ragged-right, flush left________ Justified ________

Flush right______________ Centered __________

8. Headers: None __________ Location______________

9. Footers: None __________ Location______________

10. Paragraph divisions: Space between paragraphs ________________

Tabs ____________________________

11. Graphics: Size ____________ 100%_______________

Enlarged ________ Reduced ____________

12. Text wrap-around: None __________________

Amount set away from graphic _______________

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Objective 28

Assignment Sheet 3—Determine Specifications for a Multi-Page Document

Name ____________________ Overall Rating __________

Date ____________________

Evaluation Criteria	Rating
• Directions were followed	_____
• Completed correct specifications	_____

Basic Skills

Reading Mathematics

Directions

Refer to Unit 5 of this publication and locate the information sheet. Using a line gauge and a type gauge, determine how to duplicate all the pages and artwork included in the information sheet. Write the specifications you will determine on the form below. Check the specifications carefully (you will produce this project in Job Sheet 3) and then submit the specifications sheet to your instructor for evaluation.

Note: The graphic art in the information sheet may be reproduced by using a scanner or by drawing the art in illustration software.

Project specifications sheet

1. Page size ____________________

2. Margins and type area

   Margin sizes: Top __________ Bottom __________

   Inside __________ Outside __________

   Size of type area ____________________

3. Borders: None ______ Location ______ Size ______

4. Rules: Size ______

5. Column size: Number of columns __________

   Equal or unequal sizes __________

Assignment Sheet 3

6. Typeface ____________

Type size: Heads________ Subheads ________ Body copy ______

Leading: Heads________ Subheads ________ Body copy ______

7. Type alignment: Ragged-right, flush left________ Justified ________

Flush right______________ Centered __________

8. Headers: None __________ Location______________

9. Footers: None __________ Location______________

10. Paragraph divisions: Space between paragraphs ________________

Tabs ___________________________________

11. Graphics: Size ____________ 100%________________

Enlarged ________ Reduced ____________

12. Text wrap-around: None __________________

Amount set away from graphic ________________

Objective 29

Job Sheet 1—Stack Graphics and Text

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	_____
• Positioned box over text block correctly and printed	_____
• Positioned text block over box correctly and printed	_____

Basic Skills

Reading Technology

Introduction

This exercise offers valuable experience in day-to-day EPP duties.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer

Procedure

Note: The steps in the procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open page-layout software.

☐ 3. Open a new file.

☐ 4. Create text block. Enter the text shown in Figure 1 below in 12-point type centered on page.

Figure 1

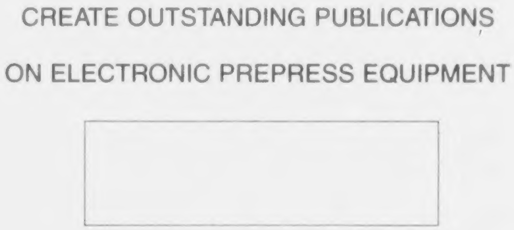
CREATE OUTSTANDING PUBLICATIONS

ON ELECTRONIC PREPRESS EQUIPMENT

☐ 5. Create graphics.

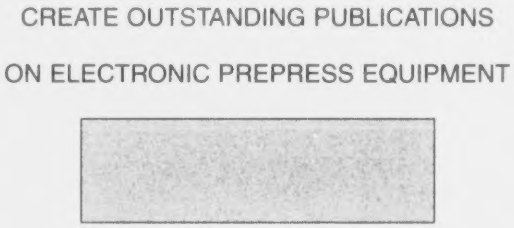
  ☐ a. Select drawing tool and draw a rectangular box smaller than text block entered in step 4; see Figure 2 below

Figure 2


CREATE OUTSTANDING PUBLICATIONS
ON ELECTRONIC PREPRESS EQUIPMENT

  ☐ b. Fill box with gray shading; see Figure 3 below.

Figure 3

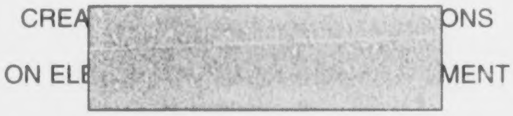

CREATE OUTSTANDING PUBLICATIONS
ON ELECTRONIC PREPRESS EQUIPMENT

☐ 6. Position box over text block.

☐ 7. Observe stacking order.

Note: The text block may appear behind the shaded box as shown in Figure 4 below.

Figure 4

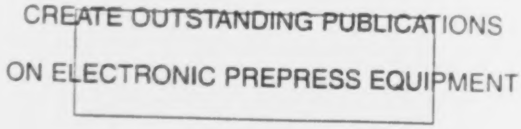

CREA ONS
ON ELE MENT

☐ 8. Position text block over box.

☐ 9. Observe stacking order.

Note: The box may appear behind the text block as shown in Figure 5 below.

Figure 5


CREATE OUTSTANDING PUBLICATIONS
ON ELECTRONIC PREPRESS EQUIPMENT

☐ 10. Save file.

☐ 11. Print page and write your name and "Job Sheet 1—Job 1" on top of printed page.

☐ 12. Close file.

☐ 13. Exit page-layout software.

☐ 14. Turn off computer.

☐ 15. Submit Job 1 to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 30

Job Sheet 2—Produce a Newsletter

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Completed startup properly	______
• Entered text correctly and saved with an appropriate file format	______
• Prepared graphics correctly and saved with an appropriate file format	______
• Prepared page layout file correctly	______
• Placed text and graphics correctly	______
• Applied fonts appropriately	______
• Edited text and graphics appropriately	______
• Saved file	______
• Printed rough draft, proofread, and made proofreading revisions	______
• Printed final draft	______

Basic Skills

Reading Technology

Introduction

This exercise offers the opportunity to create an EPP project in a very practical application.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Word-processing software
- Page-layout software
- Illustration or image-editing software or scanner, if necessary
- Printer
- Specifications determined in Assignment Sheet 2
- Student Supplement 1

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open word-processing software.

☐ 3. Enter text provided for newsletter in Student Supplement 1.

☐ 4. Save text, using appropriate file format for importing text into your page-layout software.

☐ 5. Exit word-processing software.

☐ 6. Prepare graphics provided for newsletter in Student Supplement 1.

☐ 7. Save graphics, using appropriate file format for importing graphics into your page-layout software.

☐ 8. Access page-layout software.

☐ 9. Prepare file, using applications determined in Assignment Sheet 2.

☐ 10. Place text.

☐ 11. Place graphics.

☐ 12. Apply fonts.

☐ 13. Edit text and graphics.

☐ 14. Adjust white space.

☐ 15. Save document.

☐ 16. Print rough draft and write your name and "Job Sheet 2—Job 1" at top of printed page.

☐ 17. Proofread rough draft.

☐ 18. Correct errors on rough draft marked during proofreading.

☐ 19. Save document.

☐ 20. Print final draft and write your name and "Job Sheet 2—Job 2" at top of printed page.

☐ 21. Proofread final draft.

☐ 22. Correct errors on final draft marked during proofreading.

☐ 23. Save document.

☐ 24. Print final copy and write your name and "Job Sheet 2—Job 3" at top of printed page.

☐ 25. Close file.

☐ 26. Exit page-layout software.

☐ 27. Turn off computer and printer.

☐ 28. Submit Jobs 1 through 3 to instructor for evaluation.

Evaluator's Comments: ______________________________

____

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Objective 31

Job Sheet 3—Produce a Multi-Page Document

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Completed startup properly	______
• Entered text correctly and saved with an appropriate file format	______
• Prepared graphics correctly and saved with an appropriate file format	______
• Prepared page layout file correctly	______
• Placed text and graphics correctly	______
• Applied fonts appropriately	______
• Edited text and graphics appropriately	______
• Saved file	______
• Printed rough draft, proofread, and made proofreading revisions	______
• Printed final draft	______

Basic Skills

Reading Technology

Introduction

This exercise offers the opportunity to create an EPP project in a very practical application.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Word-processing software
- Page-layout software
- Illustration software or image-editing software and scanner
- Printer
- Specifications determined in Assignment Sheet 3
- Pages of text and graphics from the information sheet in Unit 5, "Document Design"

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open word-processing software.

☐ 3. Enter text provided from the information sheet in Unit 5.

☐ 4. Save text, using appropriate file format for importing text into your page-layout software.

☐ 5. Exit word-processing software.

☐ 6. Prepare graphics provided from the information sheet in Unit 5 either by scanning the art and touching it up in image-editing software or by drawing the art in illustration software.

☐ 7. Save graphics, using appropriate file format for importing graphics into your page-layout software.

☐ 8. Access page-layout software.

☐ 9. Prepare file, using applications determined in Assignment Sheet 3.

☐ 10. Place text.

☐ 11. Place graphics.

☐ 12. Apply fonts.

☐ 13. Edit text and graphics.

☐ 14. Adjust white space.

☐ 15. Save document.

☐ 16. Print rough draft and write your name and "Job Sheet 3—Job 1" at top of printed page.

☐ 17. Proofread rough draft.

☐ 18. Correct errors on rough draft marked during proofreading.

☐ 19. Save document.

☐ 20. Print final draft and write your name and "Job Sheet 3—Job 2" at top of printed page.

☐ 21. Proofread final draft.

☐ 22. Correct errors on final draft marked during proofreading.

☐ 23. Save document.

☐ 24. Print final copy and write your name and "Job Sheet 3—Job 3" at top of printed page.

☐ 25. Close file.

☐ 26. Exit page-layout software.

☐ 27. Turn off computer and printer.

☐ 28. Submit Jobs 1 through 3 to instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 32

Job Sheet 4—Create Single Color Layout Using Work-and-Turn and Work-and-Tumble

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Work-and-turn layout completed correctly	______
• Work-and-tumble layout completed correctly	______

Basic Skills

Reading Technology

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- File saved in Job Sheet 3
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open page-layout software.

☐ 3. Open the document saved in Job Sheet 3.

☐ 4. Modify layout for **work-and-turn** printing by allowing sufficient gripper margin at top edge (leading edge) of layout sheet.

☐ 5. Save file as "Job Sheet 4—Job 1."

☐ 6. Print document and write your name and "Job Sheet 4—Job 1" on top of printed page.

☐ 7. Resave document as "Job Sheet 4—Job 2."

☐ 8. Modify layout for **work-and-tumble** printing by allowing sufficient gripper margins at both top and bottom of document.

☐ 9. Save document.

☐ 10. Print document and write your name and "Job Sheet 4—Job 2" on the top of the printed page.

☐ 11. Close file, exit software, and turn off computer and printer.

☐ 12. Submit jobs to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 33

Job Sheet 5—Create a Document Using Imposition

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Paper dummy created correctly	______
• Document layout completed correctly	______
• Eight-page signature layed out correctly	______
• Document printed correctly	______

Basic Skills

Reading

Technology

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software
- Printer
- Eight-page document (provided by instructor)
- Two blank sheets of 11 x 17 paper
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open page-layout software.

☐ 3. Create an 8-page document as specified by your instructor.

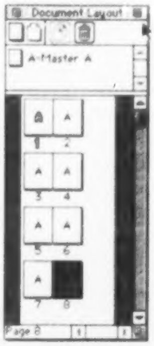
☐ 4. Save file as "Job Sheet 5."

☐ 5. Make a paper dummy by folding in half the two 11 x 17 sheets of paper.

☐ 6. Label each panel to represent the document (front, 2, 3, 4, 5, 6, 7, and back).

☐ 7. Using the Document Layout palette, move pages around to create each two-page signature. Convert any facing pages to non-facing pages.

Figure 1—Document Layout palette in QuarkXPress



☐ 8. Rearrange pages to match the paper dummy you created (as shown below).

Figure 2—Eight-page signature layed out in two-page spreads

Back Page	Front Page
Page 6	Page 3

Page 2	Page 7
Page 4	Page 5

☐ 9. Save document.

☐ 10. Print document as "Spreads" on 11 x 17 paper and create a mock-up of your document.

☐ 11. Close file, exit software, and turn off computer and printer.

☐ 12. Write your name and "Job Sheet 5" on the top of the first page.

☐ 13. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 34

Job Sheet 6—Create a Vector Drawing With Trapping

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Foreground object created correctly	______
• Background object created correctly	______
• Trapping applied correctly	______

Basic Skills

Reading Technology

Instructions

Using illustration software, create a simple vector-based shape while trapping touching colors. When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria

Tools, equipment, and materials

- Electronic prepress computer workstation
- Illustration software
- Printer
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the illustration software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open illustration software.

☐ 3. Create a new document and save as "Job Sheet 6."

☐ 4. Draw a foreground and background object.

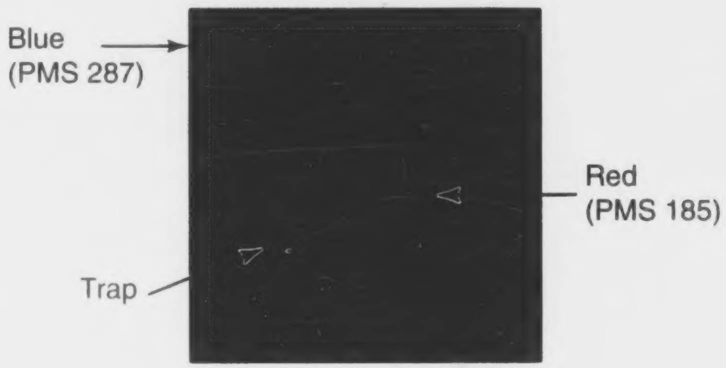
☐ 5. Fill the foreground object with red (PMS 185).

☐ 6. Fill the background object with blue (PMS 287).

☐ 7. Apply an overprint stroke of the same color (PMS 185) to the foreground object by clicking on the "Overprint" check box.

☐ 8. Set the stroke to double the .3 intended trap width (.6 stroke width).

Figure 1



☐ 9. Save file, print the document, and write your name and "Job Sheet 6" on top of the printed page.

☐ 10. Close file, exit software, and turn off computer and printer.

☐ 11. Submit job to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 35

Job Sheet 7—Preflight a Document

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Preflight check completed properly	______
• All potential problems were fixed	______
• Preflight report printed out	______

Basic Skills

Reading Critical Thinking Technology

Introduction

Before outputting a final document, a preflight check should be conducted to ensure that no conflicts exist that will prohibit the print shop from printing the job.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Preflight software
- Page-layout software
- Printer
- Student Supplement 3, "EPP Preflight Checklist"
  Note: Each print shop or service bureau will have their own set of printing guidelines.
- Final page-layout document including linked graphics

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the EPP software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open preflight software.

☐ 3. Make sure the preflight software preferences are set to match the print shop's printing guidelines.

☐ 4. Open the file to be checked.

Note: The preflight software will automatically check the document. A preflight report will be generated that you can either print or view on the screen. This report will show all errors or conflicts that would arise at the print shop.

- ☐ 5. Print out report.
- ☐ 6. Determine which problems need to be fixed. Refer to the printing guidelines.
- ☐ 7. Open page-layout software.
- ☐ 8. Make revisions to final file as necessary.
- ☐ 9. Save the revised file.
- ☐ 10. In preflight software, run a new preflight check on revised file. Print out new report.
- ☐ 11. If errors still persist, go to page-layout software to correct the errors. Continue running a preflight check on revised documents and fixing conflicts until the file is free of potential problems.
- ☐ 12. Save the revised file.
- ☐ 13. Turn in preflight report(s) to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 36

Job Sheet 8—Collect Document for Output at Service Bureau

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Folder created correctly	______
• Document collected for output correctly	______
• All missing/modified graphics were updated	______
• All fonts (screen and printer) used in document were copied into folder	______

Basic Skills

Reading Technology

Introduction

Before a final document can be sent to a print shop or service bureau, all of the fonts and graphics that were used in the file must be collected for output.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- QuarkXPress or Adobe PageMaker software
- File saved in Job Sheet 2
- Removable media drive
- Removable media (Zip, SuperDisk, SyQuest, etc.)
- Pencil or pen

Procedure

Note: If a page-layout software other than QuarkXPress or Adobe PageMaker is used on-site, the steps in this procedure should be modified as necessary.

QuarkXPress Procedures

☐ 1. Start the computer.

☐ 2. Open QuarkXPress.

☐ 3. Open the document that you created in Job Sheet 2.

☐ 4. Choose "Usage" from the "Utilities" menu.

☐ 5. Make a list of all fonts used in your document, including their styles.

☐ 6. Choose the "Pictures" tab and check for any graphics whose status is listed as "Modified" or "Missing."

☐ 7. Select any modified or missing graphics and "Update" by locating the document.

☐ 8. After all graphics are updated, click the "Done" button.

☐ 9. Select "Collect for Output" from the "File" menu.

Note: If any graphic links have been broken you are prompted to update them. If you have made any changes to the document you will be asked to save those changes.

☐ 10. In the "Collect for Output" dialog box, create a "New Folder" on your removable media disk. Name the folder "Job Sheet 8" and click the "Create" button.

☐ 11. Click "Collect."

☐ 12. Close file, and quit all running software applications.

☐ 13. Copy all the fonts you listed from the "Usage" dialog box into the "Job Sheet 8" folder.

Note: Be sure to include both the screen font suitcase and all printer fonts for each typestyle used. Do not simply drag the fonts from your type library into the folder, instead option-drag the files to create copies.

☐ 14. Eject removable media disk, and print your name and "Job Sheet 8" on the label.

☐ 15. Turn in removable media disk to your instructor for evaluation.

PageMaker Procedures

☐ 1. Start the computer.

☐ 2. Open PageMaker.

☐ 3. Open the document that you created in Job Sheet 2.

☐ 4. Choose "Save As..." from the File menu. Select "Publication."

☐ 5. Under "Copy" option, choose "All Linked Files" and "Save."

☐ 6. Examine the folder. The document along with all currently linked graphics have been copied into the folder.

☐ 7. To create a summary for the service provider, under "Utilities" and "Plug-ins," select "Pub Info..."

☐ 8. From "Display," choose the information to be included in the summary (fonts, links, and styles).

☐ 9. Select "Save" and name the file "Job Sheet 8."

Note: Place the summary into your job folder with the saved document.

☐ 10. Click "Done."

☐ 11. Open and print the summary.

☐ 12. Copy all of the fonts listed into the folder.

Note: Be sure to include both the screen font suitcase and all printer fonts for each typestyle used. Do not simply drag the fonts from your type library into the folder, instead option-drag the files to create copies.

☐ 13. Close file, and quit all running software applications.

☐ 14. Eject removable media disk and print your name and "Job Sheet 8" on the label.

☐ 15. Turn in removable media disk to your instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 37

Job Sheet 9—Produce Customer-Specified Document

Name ____________________ Attempt Number ________

Date ____________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• Document constructed to specifications	
• Document proofread	
• Document dummy prepared correctly	
• Document prepared for output	
• Preflight completed correctly	
• Paper separations printed	
• Film negatives/separations output correctly	
• Dummy, paper separations, and negative separations collected correctly	

Basic Skills

Reading Critical Thinking Technology

Introduction

Electronic prepress operators are often asked to produce documents as specified by customers. This job sheet will give the student experience in creating a job from start to finish following a customer's specifications.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Page-layout software, illustration software, image-editing software, preflight software, and any other software required for document preparation
- Electronic prepress document and instructions (provided by instructor)
- Removable media drive (Zip, SuperDisk, SyQuest, etc.)
- Removable media (Zip, SuperDisk, SyQuest, etc.)
- Printer
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the EPP software and equipment used on-site.

☐ 1. Start the computer.

☐ 2. Construct document to specifications provided by instructor utilizing page-layout software, illustration software, and image-editing software.

☐ 3. Save and print document.

☐ 4. Proofread document for typographical and formatting errors.

☐ 5. Make any needed corrections and reprint document.

☐ 6. Prepare document dummy and check folds, bleeds, etc.

☐ 7. Prepare document for output.

☐ 8. Complete a preflight check of job.

Note: You may run the preflight check using preflight software, if available. If not, use Student Supplement 3, "Preflight Checklist" to manually check your job.

☐ 9. Print paper separations; check for accuracy.

☐ 10. Make any needed corrections.

☐ 11. Output film negatives/separations.

☐ 12. Save document.

☐ 13. Collect dummy, paper separations, and film negative separations.

☐ 14. Write your name and "Job Sheet 9" on cover sheet.

☐ 15. Submit entire package to instructor for evaluation.

Evaluator's Comments: ______________________________

____

____

Objective 38

Job Sheet 10—Package a File Using PDF

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Acrobat Distiller used properly	______
• PDF file created correctly	______

Basic Skills

Reading Technology

Introduction

Because PDF files embed the fonts and graphics used in a document inside the PDF file, fonts and graphics no longer need to be sent to the print shop separately.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- QuarkXPress or Adobe PageMaker
- Adobe Acrobat Distiller software and user's manual
- File saved in Job Sheet 9

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the page-layout software and EPP equipment used on-site.

QuarkXPress 4.0 Procedure

☐ 1. Open QuarkXPress 4.0.

☐ 2. Open the file saved in Job Sheet 9.

☐ 3. Open the Print dialog box.

☐ 4. Select Acrobat Distiller PPD from the Printer Description pop-up menu located in the Setup tab.

☐ 5. Select Page Setup.

☐ 6. Select Acrobat PDF under For Format For.

☐ 7. Select PostScript Options in the pop-up menu, and deselect all PostScript options.

☐ 8. Customize your document by selecting the appropriate options in the Print dialog box.

☐ 9. Select Output, and select the appropriate resolution for your document.

☐ 10. Click Printer.

☐ 11. Select Save As File from the pop-up menu.

  ☐ a. For Format, select PostScript job.

  ☐ b. For PostScript Level, select the appropriate level for your PDF file.

  ☐ c. For Data Format, select Binary.

  ☐ d. For Font Inclusion, select All.

☐ 12. Select any other appropriate settings for your PDF file.

☐ 13. Once all settings have been selected, click Save Settings, and then click Distill.

☐ 14. Choose a location and a name for the file, and then click Save.

Note: Acrobat Distiller should automatically launch once file has been saved. The PDF file should now be saved with a ".pdf" extension.

Adobe PageMaker Procedure

Note: There are two methods of creating PDF files in PageMaker. Refer to your Acrobat Distiller user's manual for the second method.

☐ 1. Open PageMaker.

☐ 2. Open the file saved in Job Sheet 9.

☐ 3. Select *File > Print.*

☐ 4. For PPD, select Acrobat Distiller.

☐ 5. Select Features, and then choose a resolution.

☐ 6. Select Options.

☐ 7. Select Normal in the Send Image Data pop-up menu.

☐ 8. Select Send Binary Image Data from the Data Encoding pop-up menu.

☐ 9. Deselect Use Symbol Font For Special Characters.

☐ 10. Select Write PostScript to File.

☐ 11. Click Save.

☐ 12. Click Save.

☐ 13. Open Acrobat Distiller.

☐ 14. Select the appropriate option from the Job Options pop-up menu.

Note: Select PrintOptimized if the PDF file will be sent to a desktop printer, digital copier, or CD-ROM. Select PressOptimized if the PDF file will be sent to an imagesetter or platesetter.

☐ 15. Choose Open from the File menu and open the PostScript file you saved earlier.

☐ 16. In the Specify PDF File Name dialog box, choose a folder and name the PDF file, and click Save.

Evaluator's Comments: ____________________

____

____

Objective 39

Job Sheet 11—Use a File Compression Utility for File Transfer or Storage

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Archive created correctly	______
• Files compressed properly	______

Basic Skills

Reading Technology

Introduction

EPP files are often quite large because of graphics, document length, etc. File compression software compacts the data in a file so it takes up less disk space. File size is very important when transferring files via telecommunications or when storing files on a disk with limited space available.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- StuffIt or other file compression software utility
- File saved in Job Sheet 2
- File saved in Job Sheet 3
- Floppy disk
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the file compression software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open StuffIt or other file compression software utility.

☐ 3. From the File menu select "New Archive."

☐ 4. Name the archive "Job Sheet 11.sit" in "Create NEW archive" field.

☐ 5. Click "New" button.

☐ 6. Click "Add" (for single document) or "Multiple" (if more than one file is required—such as page-layout document, graphics, fonts, etc.).

☐ 7. Locate file saved in Job Sheet 2.

☐ 8. Select document and click "Add" button.

☐ 9. Locate file saved in Job Sheet 3.

☐ 10. Once all of the documents that you wish to compress are located in the archive window, click "Done" button.

☐ 11. From "File" menu select "Close."

☐ 12. Copy the StuffIt archive to a floppy disk and print your name on the diskette label.

☐ 13. Exit software, and turn off computer and printer.

☐ 14. Submit disk to the instructor for evaluation.

Evaluator's Comments: ____________________

Objective 40

Job Sheet 12—Transfer File Using Telecommunications

Name ____________________ Attempt Number ________

Date ____________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• E-mail composed properly	
• File attached correctly	
• File transferred successfully	

Basic Skills

Reading Technology

Introduction

Many print shops accept EPP files from their customers via e-mail, bulletin boards, FTP, or LAN. Transferring files using telecommunications is convenient for the print shop and the customer.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Telecommunications software (online service, e-mail service, etc.)
  Note: This job sheet uses AOL.
- Compressed StuffIt archive saved on disk in Job Sheet 11 (Job Sheet 11.sit)
- Pencil or pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the telecommunications software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Open telecommunications software.

Note: This job sheet uses AOL telecommunications software.

☐ 3. Choose “Write” from the button bar at top of screen.

☐ 4. Compose mail document including send to, subject, and body fields.

☐ 5. Click “Attachments” button.

☐ 6. In “Attachments” window, click “Attach” button.

☐ 7. Insert disk into computer, and select "Job Sheet 11.sit" document.

☐ 8. Click "Open."

☐ 9. In "Attachments" window, click "OK" button.

☐ 10. In AOL mail window, click "Send Now" button.

☐ 11. Once e-mail and attached document have been sent, AOL responds "File transfer complete."

☐ 12. Exit software, and turn off computer.

Evaluator's Comments: ______________________________

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Objective 41

Job Sheet 13—Use a Backup Utility to Create Tapes/Disks

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Backup completed properly	______
• Media labeled properly	______

Basic Skills

Reading Technology

Introduction

It is very important that EPP operators back up their files regularly and in an organized manner. This ensures that documents won't be lost in case of equipment failure or as other unforeseen problems arise. Backup utilities save time and minimize storage space by backing up only new and changed files.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Backup utility such as Dantz's Retrospect
- External peripheral device such as tape drive, CD burner, floppy drive, or other type of removable drive
- Removable media such as tape, CD, floppy disk, Zip disk, etc.
- Files saved in this unit

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the backup utility and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Turn on the external drive that you wish to back your files up to.

Note: Depending on th equipment available in your classroom, you may back up your files to a CD burner, Zip drive, optical drive, floppy drive, or other type of removable drive.

☐ 3. Open backup utility software.

☐ 4. Select files to back up.

Note: Your instructor will provide you with the files that you are to back up.

☐ 5. The backup utility will automatically ask you to name the catalog of files. Choose an appropriate name for the catalog.

☐ 6. Label the removable media with an appropriate name so that in the future you can access the files quickly and efficiently.

Note: Many print shops back up each month's files to a separate tape (or other type of removable media) and write the month and year on the label.

☐ 7. Insert removable media into appropriate drive.

☐ 8. Execute the backup.

☐ 9. Turn in the removable media containing your backed up files to your instructor for evaluation.

Evaluator's Comments: ______________________________

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Objective 42

Job Sheet 14—Use a Backup Utility to Restore Files to Hard Drive

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• Files restored to hard drive using backup utility	______

Basic Skills

Reading Technology

Introduction

Backup utilities are a necessity for EPP operators, not only for backing up files but also for restoring deleted files.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- Backup utility such as Dantz's Retrospect
- External peripheral device such as tape drive, CD burner, floppy drive, or other type of removable drive
- Removable media containing files backed up in Job Sheet 13

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the backup utility and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Turn on the external drive that you used to back up the files in Job Sheet 13.

☐ 3. Open backup utility software.

☐ 4. Search the catalog and select the files to be restored to the hard drive.

Note: The catalog does not contain the actual files. It simply contains a list of the files that were previously backed up to this particular catalog.

☐ 5. Specify the target location where you would like the files to be restored to. In this case, select your hard drive.

☐ 6. Locate appropriate media containing files to be restored.

☐ 7. Insert removable media into appropriate drive.

☐ 8. Execute restore.

☐ 9. Have your instructor evaluate your performance.

Evaluator's Comments: ______________________________

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Objective 43

Job Sheet 15—Burn a CD

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	______
• CD burned appropriately	______

Basic Skills

Reading Technology

Introduction

Electronic prepress operators should be familiar with the process of burning or writing information to a CD. CDs can be used to permanently store files, or they can be used to provide customers with their final files for a job.

Note: Rewritable CD drives are available that will burn information onto a CD that has already been used. It should be noted that some older computers are unable to read rewritable CDs.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

Tools, equipment, and materials

- Electronic prepress computer workstation
- CD burner/writer
- Blank CD
- CD burning software such as Adaptec's Toast
- File created in Job Sheet 2
- Pen

Procedure

Note: The steps in this procedure should be modified to comply with the commands and prompts of the CD burning software and EPP equipment used on-site.

☐ 1. Start the computer.

☐ 2. Turn on CD burner/writer.

☐ 3. Open CD burning software.

☐ 4. Select file created in Job Sheet 2. This file will be transferred to the CD.

☐ 5. Name the CD.

☐ 6. Label the outside of the CD appropriately.

☐ 7. Set options such as naming (filenames), format (PC or Mac), and speed.

☐ 8. Write the CD.

☐ 9. Turn in burned CD to instructor for evaluation.

Evaluator's Comments: ______________________________

Objective 44

Job Sheet 16—Perform Quality Control Checks on Film Processor and Imagesetter

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation Criteria	Rating
• Directions were followed	
• Problems identified correctly	
• Quality control check performed correctly	
• Maintenance performed correctly	

Basic Skills

Reading

Critical Thinking

Technology

Introduction

EPP operators must perform routine quality control checks on film processors and imagesetters to ensure that film quality and film content are acceptable.

Instructions

When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria. Note any problems you may find on the blanks provided below each step.

Tools, equipment, and materials

- Processed film (provided by instructor)
- Film processor and imagesetter
- Densitometer
- Pen or pencil

Procedure

☐ 1. Check the film quality of the processed film.

  ☐ a. Check for overexposed film that darkens halftones, thickens lines, and fattens type.

  Problems ______________________

  ____

  ☐ b. Check for underexposed film that causes halftones to plug and lines and type to be too thin.

  Problems ______________________

  ____

☐ c. Check for scratches on film. Scratches can be caused by dust, dirt, or rough edges on the film box, imagesetter film path, or takeup cassette. A dirty processor or worn rollers can also cause scratches as it develops.

Problems ______________________________

____

☐ d. Check film for opacity in areas that should appear black. A densitometer may be used to measure the imagesetter results. Developer may need to be refreshed or replaced in film processor to improve film opacity.

Problems ______________________________

____

☐ e. Check for cloudy or foggy areas. This is probably a result of old chemistry. Try adjusting the processing speed.

Problems ______________________________

____

☐ 2. Check the film content of the processed film.

☐ a. Check for font problems such as fonts replaced with Courier, odd spacing between characters, and lines in a paragraph.

Problems ______________________________

____

☐ b. Check for missing or added elements on each film separation, comparing the film to color prints or laser separations.

Problems ______________________________

____

☐ c. Check for overprinting and knockouts. Look for elements that are reversed and those requiring tight registration.

Problems ______________________________

____

☐ d. Check bleeds to ensure that objects extend beyond the crop mark boundaries.

Problems ______________________________

____

☐ e. Check trapping to verify that overlapping colors appear correct.

Problems ______________________________

____

☐ f. Check for dot values, consistency, and smooth gradations in tints and halftones.

Problems ______________________________

____

☐ 3. Perform monthly maintenance on film processor and imagesetter.

☐ a. Check film exposure with densitometer.

Problems ______________________________

____

☐ b. Clean film processor.

☐ 4. Turn in this job sheet to your instructor for evaluation.

Evaluator's Comments: ______________________________

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